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Proceedings

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THE
MISCELLANEOUS DOCUMENTS

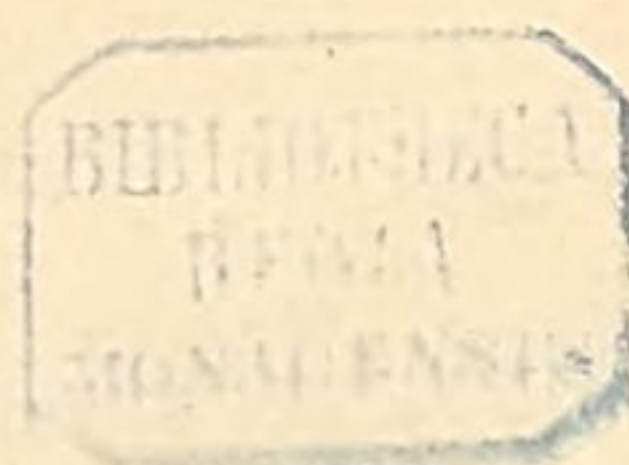
OF THE
SENATE OF THE UNITED STATES

FOR THE
SECOND SESSION OF THE FIFTY-FIRST CONGRESS.

IN SEVEN VOLUMES.

Volume 1.—Nos. 1 to 25 (inclusive.)
Volume 2.—No. 26.
Volume 3.—Nos. 27 to 93 (inclusive) except Nos.
58 and 83.
Volume 4.—No. 58.
Volume 5.—No. 83.
Volume 6.—No. 94.
Volume 7.—No. 95.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1891.



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TO THE

MISCELLANEOUS DOCUMENTS

OF THE

SENATE OF THE UNITED STATES

FOR THE

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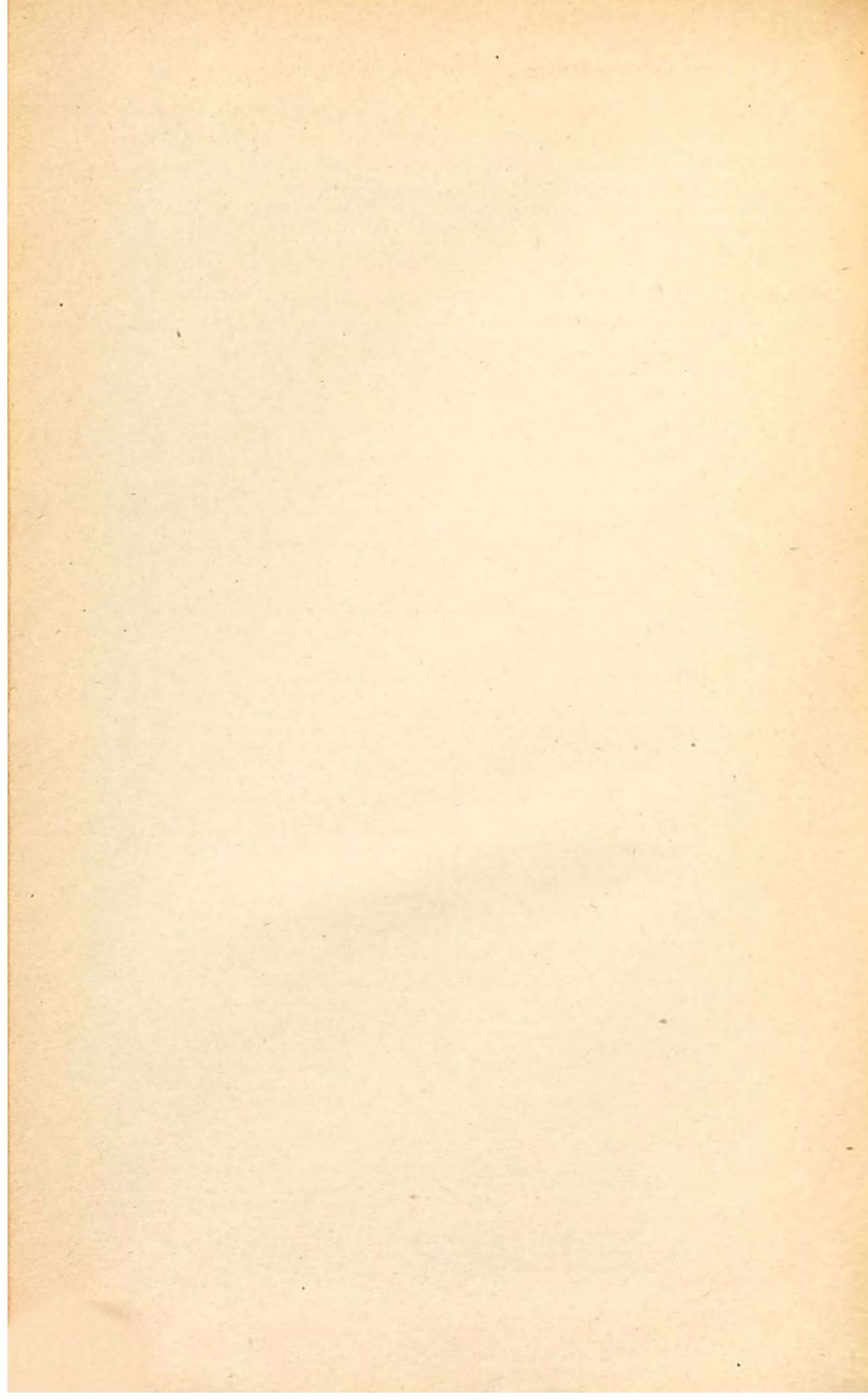
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ANNUAL REPORT

OF THE

PUBLIC PRINTER

FOR THE

FISCAL YEAR ENDED JUNE 30, 1890.

DECEMBER 18, 1890.—Referred to the Committee on Printing and ordered
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WASHINGTON:

GOVERNMENT PRINTING OFFICE.

1890.

ANNUAL REPORT
OF
THE PUBLIC PRINTER.

OFFICE OF THE PUBLIC PRINTER,
Washington, D. C., December 17, 1890.

SIR: As required by law, I have the honor to transmit to Congress the report of the condition and operations of this office for the fiscal year ended June 30, 1890.

F. W. PALMER,
Public Printer.

Hon. LEVI P. MORTON,
President of the Senate.

To the Senate and House of Representatives:

In the appendix to this report will be found tabular exhibits showing in detail the financial transactions of the Government Printing Office for the fiscal year which terminated June 30, 1890. In order that there may be a full knowledge of the present condition and future needs of the office, I submit herewith a statement showing what means have been adopted for the improvement of the plant since the close of the fiscal year.

In response to urgent appeals by some of my predecessors and myself for a new fire-proof building for this office, provision was made by act of Congress during the last session for the appointment of the Secretary of the Treasury, the Architect of the Capitol, and the Public Printer as a commission to select a suitable site for such a building. They were empowered to acquire, either by purchase or condemnation proceedings, the land necessary for the purpose, and the sum of \$250,000, or so much thereof as might be necessary, was appropriated. Provision for this fund was made in the act making appropriations for sundry civil expenses of the Government, approved August 30, 1890. The commissioners held their first session in the rooms of the Secre-

tary of the Treasury on the 1st of September, and organized by the election of Hon. William Windom as chairman and F. W. Palmer as secretary. During this session a resolution was adopted authorizing the insertion in two daily journals of this city of an advertisement, inviting the presentation of sealed proposals for the sale of land for the purpose heretofore mentioned. In response to this advertisement, seventeen different bids were submitted, and, after careful personal examination of all the different tracts of land offered had been made by the commission, the west half of square 678, bounded by G street on the north, First street on the east, North Capitol street on the west, and F street and Massachusetts avenue on the south, was deemed in all respects the most eligible, and articles of agreement for its purchase were executed by the commission and Mr. C. A. Snow, the owner. The question of title was submitted to the Attorney-General for his examination; but, inasmuch as conflicting claims of ownership were submitted to him, he reported, on the 3d of December, that up to that time the title had not been perfected; and the board therefore requested him to commence proceedings at once for the condemnation of the property, in accordance with the provisions of the act under which the commission had been appointed. In the appendix to this report will be found in detail an official statement of the proceedings of the board in fulfillment of the trust committed to them.

A site for a new Government Printing Office having been thus virtually selected, I recommend most earnestly an appropriation by Congress during the present session for the construction of a fire-proof structure. The reasons for urgency were stated in my last annual report, and were, in brief, that a portion of the present building is constructed of combustible material and is constantly liable to destruction by fire; that there are at times in the building more than two thousand employés, and that a fire would almost inevitably be accompanied by the loss of a large number of human lives; that the present structure is ill lighted, poorly ventilated, inconveniently arranged, and so circumscribed in dimensions that much of the work is done at great disadvantage. In the interest of economy, of security to Government property, and of humanity, the new structure should be commenced at the earliest possible day and prosecuted to final completion with the utmost vigilance and dispatch.

In the appendix to this report will be found a statement of the condition of the presses in this office on the 30th day of June, 1890. Since that date contracts have been made for nine new presses, which will take the place of an equal number which have become unserviceable by reason of long use. Careful estimate has been made of the additional number of new presses which will be needed, and an appropriation of \$100,000 is asked for this purpose. The increase of work in this office makes necessary the procurement of new and improved machinery, and, while celerity of work would be secured by such expenditure, economy would be also accomplished.

In my last annual report I presented the facts connected with the claim of the estate of Mr. John C. Rives for the storage of stereotype plates of the Congressional Globe. Although this service was rendered mainly during the administrations of my predecessors, I consider the claim a just one, and therefore recommended its payment. I renew that recommendation.

For details showing the amount of work executed by this office during the last fiscal year, reference is asked to the tabular statements in another part of this report.

F. W. PALMER,
Public Printer.

APPENDIX.

REPORT OF THE COMMISSION TO SELECT A SITE FOR THE GOVERNMENT PRINTING OFFICE.

To the Senate and House of Representatives :

The undersigned, appointed as a Commission to select a site for the Government Printing Office, beg leave to submit the following report :

During the first session of the Fifty-first Congress the act making appropriations for sundry civil expenses of the Government, approved August 30, 1890, contained the following provisions :

SEC. 2. That to provide accommodation for the Government Printing Office, and the construction of the needed storage and distributing warehouses in connection therewith, the Secretary of the Treasury, the Public Printer, and the Architect of the Capitol, acting as a board, be, and they are hereby, empowered and instructed to acquire, either by purchase or by condemnation proceedings, as hereinafter provided, the land necessary, in their opinion, for the purposes aforesaid, and for the purposes stated, the sum of two hundred and fifty thousand dollars, or so much thereof as shall be necessary, is hereby appropriated out of any money in the Treasury not otherwise appropriated.

SEC. 3. That in the event it shall be necessary, in order to carry out the purpose of the foregoing section, for the board, as above constituted, to acquire land, said board is empowered and directed to acquire the same by negotiation, where any such land may and can be so acquired and title secured at a price not above a fair relative value as to other lands which have been sold in the immediate vicinity ; or if the said board hereby created shall be unable to purchase said land by agreement with any one or more of the respective owners at a reasonable price within sixty days after the passage of this act they are authorized and directed to make application to the supreme court of the District of Columbia, at any general or special term thereof, by petition for the condemnation of such land not so purchased, and for the ascertainment of its value. Such petition shall contain a particular description of the property not so purchased, and selected for the purpose aforesaid, with the name of the owner or owners thereof and their residences, so far as the same may be ascertained, together with a plan of the land proposed to be taken ; and thereupon the said court is authorized and required to cite all such owners and all other persons interested to appear in said court at a time to be fixed by such court, on reasonable notice, to answer the said petition ; and if it shall appear to the court that there are any owners or other persons interested who are under disability the court shall give public notice of the time at which the said court will proceed with the

matter of condemnation; and at such time if it shall appear that there are any persons under disability either who have appeared or who have not appeared, the court shall appoint guardians ad litem for each such persons, and the court shall thereupon proceed to appoint three capable and disinterested commissioners to appraise the value of the respective interests of all persons concerned in such lands, under such regulations as to notice and hearing as to the court shall seem meet. Such Commissioners shall thereupon, after being duly sworn for the proper performance of their duties, examine the premises and hear the persons in interest who may appear before them, and return their appraisement of the value of the interests of all persons, respectively, in such land; and when such report shall have been confirmed by the court the President of the United States shall, if he think the public interest requires it, cause payment to be made to the respective persons entitled according to the judgment of the court, and in case any of such persons are under disability, or can not be found, or neglect to receive payment, the money to be paid to any of them shall be deposited in the Treasury to their credit, unless there shall be some person lawfully authorized to receive the same under the direction of the court, and when such payments are so made, or the amounts belonging to persons to whom payment shall not be made are so deposited, the said lands shall be deemed to be condemned and taken by the United States for the public use.

The Commissioners authorized by the act heretofore mentioned held their first session in the rooms of the Secretary of the Treasury on the 1st of September, 1890, and organized by the election of Hon. William Windom as chairman and F. W. Palmer as secretary. During this session a resolution was adopted authorizing the insertion in two daily journals in this city of an advertisement inviting the presentation of proposals for the sale of land for the purpose heretofore mentioned. The advertisement was in the following language:

PROPOSALS FOR A SITE FOR A BUILDING FOR THE GOVERNMENT
PRINTING OFFICE.

WASHINGTON, D. C., *September 2, 1890.*

Sealed proposals will be received until 12 o'clock m. of Wednesday, September 17, 1890, by the undersigned, for the purchase of a site for a new building for the Government Printing Office, said site to contain about one hundred and fifty thousand (150,000) square feet, and to be within the bounds of H street north, First street east, B street north, and Ninth street west, in the city of Washington.

Each proposal will state the location of the ground, the number of square feet offered, and the names and residences of the owner or owners.

These proposals must be indorsed "Proposals for a site for the Government Printing Office," and addressed to Hon. William Windom, Secretary of the Treasury, chairman of the Board.

WILLIAM WINDOM,
Secretary of the Treasury.
FRANK W. PALMER,
Public Printer.
EDWARD CLARK,
Architect of the Capitol.

On the 17th of September, in accordance with the terms of the foregoing advertisement, the Board received and considered proposals for the sale of various tracts of land, as follows:

1.

WASHINGTON, D. C., *Sept. 15, 1890.*

To Hon. WILLIAM WINDOM,

Secretary of Treasury:

DEAR SIR: I propose to offer about 5,600 feet of ground in square 624, fronting 32 feet on G st., N. W., for site for Government Printing Office, for two dollars a sq. foot, with the improvements. House 35 has 7 rooms, a large frame stable, and large (brick) carriage house. House 57 has 4 brick rooms, and wood kitchen in front; frame house in alley.

Respectfully,

TIMOTHY COSTELLO,
35 G st., N. W.

2.

SEPTEMBER 15, 1890.

Hon. WM. WINDOM,
FRANK W. PALMER, Esq.,
EDWARD CLARK, Esq.:

GENTLEMEN: I hereby propose to offer lot 15, square 624, Maguire's subdiv., twenty-four (24) ft. front by 175 ft. 3 inches in depth, with improvements, a 1-story brick carriage house in front, with a two-story brick stable in rear, at \$2.25 per sq. ft.

JOHN G. WOLFE,
305 H street, N. E., City.

3.

WASHINGTON, D. C., *September 15, 1890.*

Hon. WILLIAM WINDOM,

*Chairman of the Board for Selecting a Site for a
Building for the Government Printing Office:*

In pursuance of advertisement of September 2nd, 1890, I offer my lot, with improvement, which is situated on G street between 1st street and North Capitol street, northwest, in square No. 624, and lot No. 11, containing 1,392 square feet, being 16 feet front on G st. and 87 feet deep, at two (2) dollars per square foot, and a two (2) story and base-ment brick house for one thousand (\$1,000) dollars. I am the owner and occupy the above premises.

MARY E. HARVEY,
Number 27 G st., N. W.

1,392 feet
\$2 per foot

\$2,784
1,000 improvements

3,784

4.

WASHINGTON, *September 8, 1890.*

To the Hon. WILLIAM WINDOM,
Secretary of the Treasury;
 FRANK W. PALMER,
Public Printer;
 EDWARD CLARK,
Architect of the Capitol:

GENTLEMEN: I own two pieces of property, both of which are located in square 624, fronting on G street, N. W., and running back to Jackson alley.

The first is the eastern part of lot numbered (13), in square 624, sixteen feet front by a depth of 175 feet and 3 inches, containing, in all, 2,804 feet, and improved on the G street front by a three-story and back building, 8 large rooms and 2 small rooms, and on the Jackson alley front by a two-story brick containing 4 rooms. Both houses are brick. I offer said lot, together with all improvements, for two dollars and fifty cents per square foot (\$2.50 per square foot).

The second is the eastern part of lot numbered (25), in square 624, fronting sixteen feet (16 ft.) on G street and running back one hundred and seventy-five feet three inches (175 ft. 3 in.) to Jackson alley. This lot is improved on the G street front by a two-story and back building brick house, containing 6 good rooms and 2 small rooms. The said lot is improved on the Jackson alley front by a two-story brick house, containing 4 rooms. I offer this lot, together with all improvements, for two dollars and twenty-five cents per square foot (\$2.25 per square foot), 2,804 feet.

Very respectfully,

JOHN F. KELLY,
Lieut. Met. Police,
Residence, 31 G street, N. W.

5.

WASHINGTON, D. C., *Sept. 16, 1890.*

To the Hon. WILLIAM WINDOM,
Secretary of United States Treasury:

SIR: We, the undersigned, have the honor to submit the following proposal for the sale of lots A, B, 1, 2, and 3, square 624, fronting one hundred and nine (109) feet on N. Capitol street, between Jackson alley and G sts., N. W., with a depth of 130 feet to a 15-foot alley, amounting to 14,170 square feet, more or less.

For the sum of three (3) dollars per square foot.....	\$42,510.00
For improvements erected on said lots.....	20,000.00
	62,510.00

ANDREW GLEESON, } *Owners.*
 ELLEN GLEESON, }
 802 First st., N. W.

6.

WASHINGTON, D. C., *Sept. 16th, 1890.*

To the Hon. WILLIAM WINDOM,
Secretary of the U. S. Treasury :

SIR: The undersigned respectfully submits the following proposal for the sale of original lot 43, square 624, fronting on H st., north, between North Capitol and First st., west, for a site for the Government Printing Office.

Original lot 43 is 24 feet front by 175.3 ft. deep, is bounded on the west by a 20-ft. alley, and contains 4,206 sq. ft., at \$2.25.....	\$9, 463. 50
Improvements on front, brick store; improvements on alley, brick stable and dwelling; improvements on rear, two brick houses; total improvements	4, 000. 00
Total for orig. lot 43 and improvements	13, 463. 50

D. CONNELL,
 741 First, N. W., City.

7.

WASHINGTON, D. C., *September 16, 1890.*

To the Hon. WILLIAM WINDOM,
Secretary of the U. S. Treasury :

SIR: The undersigned respectfully submits the following proposal for the sale of lots 44 and 45 in square 624, fronting on H st., north, between North Capitol st. and First st., west, for a site for the Government Printing Office :

Original lot 44 is 24 feet front by 175.3 ft. deep, and contains 4,206 sq. ft., at \$2.25.....	\$9, 463. 50
Improvements, 2 stores and dwelling on front.....	5, 000. 00
“ 2 dwellings on rear.....	1, 000. 00
Total for orig. lot 44 and imp	15, 463. 50
Original lot 45 is 24 feet front by 175.3 ft. deep and contains 4,206 sq. ft. at \$2.25.....	9, 463. 50
Improvements on front, 1 brick dwelling.....	3, 000. 00
“ “ rear, 2 “ houses and stable.....	1, 000. 00
Total for orig. lot 45 and imp	13, 463. 50

JOHN J. FULLER,
 58 H st., N. W.

8.

WASHINGTON, D. C.,
September 16, 1890

To the Hon. WILLIAM WINDOM,
Secretary of the U. S. Treasury :

SIR: The undersigned respectfully submits the following proposal for the sale of part lot 46, square 624, fronting on H st., north, between

North Capitol and First st., west, for a site for the Government Printing Office.

Lot 46 is 24 ft. front by 125 ft. deep, and contains 3,000 sq.

feet, at \$2.25	\$6,750.00
Improvements, store and dwelling	3,000.00
Total	9,750.00

JOHN ELBERT,
54 H st., N. W.

9.

To the Board of Commissioners for

Purchase of Site for Government Printing Office:

I own in square six hundred and twenty-four (624), bounded by H street, North Capitol street, G street, and First street, northwest, parts of sublots nineteen (19) and twenty (20), containing about three thousand (3,000) square feet, which I am willing to sell for two (\$2) dollars per square foot, and improvements thereon at value assessed by District assessor for taxation.

Very respectfully, etc.,

ALEXANDER BRUCE,
No. 45 G street, N. W.

WASHINGTON, D. C., Sept. 16th, 1890.

10.

WASHINGTON, D. C., September 16, 1890.

To Hon. WILLIAM WINDOM,

Secretary of the Treasury:

DEAR SIR: I propose to offer for sale about (6,660) six thousand six hundred and sixty sq. feet of ground fronting on G st., in square numbered six hundred and twenty-four (624), all of sublots eighty one (81) and eighty [-two] (82), now used for storage purposes by the Government Printing Office, for one dollar and seventy-five cents (\$1.75) per sq. foot.

Respectfully,

M. GORMAN,
No. 823 2nd st., N. E., City.

11.

WASHINGTON, D. C., September 10th, 1890.

Hon. WM. WINDOM,

Secty. Treasury, &c.:

SIR: We submit the following "under proposals for site, &c."

In square 630, pt. of lot 4, 22 ft. on N. Jersey ave. by 147 ft., owned by Morris Keim. Contains 3,250 sq. feet. Residence, Springfield, Md. We are his duly authorized agent to offer this lot at \$1.60 per sq. ft.

Resp'y,

FISH & MILLER, Agents.

12.

WASHINGTON, D. C., *Sept. 17th, 1890.*

Hon. WM. WINDOM,
Secretary of Treasury:

DEAR SIR: We also submit for your consideration square No. 630, between D and E and New Jersey avenue and North Capitol street, northwest, containing about 190,000 square feet; the price exceeding the appropriation, we concluded to give only a portion of it, but the location being so central and so close to the Capitol makes it very desirable for the purpose required.

We give below prices and names of owners; location is marked on the plat inclosed:

Acker Bros., 45,241 square feet (2 corners).....	\$100, 000
A. Carry, 36,000 square feet.....	54, 000
M. Thomas, 4,400 square feet	20, 000
S. M. Plumley, 7,066 square feet	20, 000
Total	194, 000

Fenno, Wylie & Reilly, containing 29,226 sq. feet, exclusive of alleys, we estimate can be purchased for \$55,000, making a total of 121,933 sq. feet, for the sum of \$249,000.

We also have the following for sale in the same square, on N. J. ave. front and E st.:

Lewis, 1,720 square feet	\$11, 000
W. Nailor, 2,992 square feet.....	12, 000
Ferry, 10,500 square feet	42, 000
Rider Bros., 8,335 square feet.....	16, 670
Hattel, 6,250 square feet.....	10, 000
Dimarzo, 1,550 square feet.....	3, 100
Total	94, 770

The other owners in the square from whom we have not heard are:

Hay,	}	Estimated No. feet, 10,000 ft.; estimated price, \$20,000.
Wroe,		
Corcoran,		
Quick,		
Freirich.		

Very respectfully,

CARUSI, EVANS & CARUSI.

N. B.—As the time given would not permit us to complete investigation of the entire square, we would be glad to do so if requested.

13.

WASHINGTON, D. C., *Sept. 17, 1890.*

Hon. WM. WINDOM,
*Secretary of the Treasury, Chairman of the Board
 for Selection of Site for Government Printing Office:*

SIR: In accordance with your advertisement dated Sept. 2, 1890, a copy of which is hereto annexed, we have the honor to tender for use as a site for the Government Printing Office the following property in

square numbered five hundred and seventy-four (574), situated between First and Second streets, west, and B, C, and Indiana avenue, north:

	Price, including improvements.
Lot 1, the property of Samuel Emery, of Washington, D. C., containing 40,384 sq. ft.	\$74,691.20
Lots A, B, C, D, E, F, of 3, sub. f of 3, b. g. 420, R. and S., the property of Matthew G. Emery, of Washington, D. C., containing in all 66,216 sq. ft.	127,188.80
Lots O, P, and Q, the property of Thos. W. Smith, of Washington, D. C., containing in all 11,034 sq. ft.	51,500.00
Lots M and N, the property of the estate of W. W. Corcoran, deceased, of Washington, D. C., containing in all 4,359 sq. ft.	11,919.50
Lot 13, property of E. A. Dovilliers, of Washington, D. C., containing 2,101 sq. ft.	8,252.50
Lot 12, property of Eugene Carusi, of Washington, D. C., containing 2,101 sq. ft.	8,752.50
Lot 11, property of Emily N. Meloy, of Washington, D. C., containing 2,101 sq. ft.	12,000.00
Lot 9, property of Anton Eberly, of Washington D. C., containing 2,101 sq. ft.	11,303.00
Lot 18, property of Louis H. Schneider, of Washington, D. C., containing 1,065 sq. ft.	6,102.50
Lot 19, property of Louis H. Schneider, of Washington, D. C., containing 1,065 sq. ft.	6,102.50
Lot 17, property of A. L. and John M. Eshleman, of Washington, D. C., containing 1,151 sq. ft.	12,000.00

Total number of square feet submitted, 133,678, more or less.

Respectfully,

PLANT & TURPIN,

1429 New York Avenue, Washington, D. C.

14.

WASHINGTON, D. C., Sept. 17, 1890.

Gentlemen of the Board for the Selection of a

Site for the Public Printing Office of the United States:

SIRS: In reply to your advertisement in the Star, I beg to offer one hundred and fifty thousand (150,000) feet of the western half of square 678, situated on North Capitol st., between F and G streets, including lots 3, 4, 5, 6, 7, and 8, at the rate of one dollar and fifty cents (\$1.50) per square foot; or I will sell all the ground, 170,674½ square feet, for two hundred and forty-nine thousand seven hundred dollars (\$249,700). I am the sole owner, and can make a perfect title and give immediate possession of the entire property. The ground above offered is vacant, except temporary structures, and is surrounded by a high board fence. My residence is at 712 Eighth street, N. W., Washington, D. C.

Very respectfully,

C. A. SNOW.

WASHINGTON, D. C., September 25, 1890.

Gentlemen of the Board of Selection of a

Site for the Government Printing Office:

GENTLEMEN: In response to your letter of recent date, I have the honor to state that, after consideration of the same and responding thereto, I submit the following amendment of the within proposal: I will sell the west half of said square six hundred and seventy-eight,

which contains, in square feet, 170,648 sq. ft., more or less, for the sum of two hundred and forty-three thousand one hundred and seventy-five dollars (\$243,175). Said ground is bounded on the north by G street, N. E., on the south by Massachusetts avenue and F street, N. E., on the west by North Capitol street, and on the east by an unnamed street or alley sixty feet wide along the entire length of said tract.

Respectfully,

C. A. SNOW.

15.

WASHINGTON, D. C., *Sept. 10th, 1890.*

Hon. WM. WINDOM,
Secty. Treasury, etc.:

SIR: We submit the following property under the invitation for proposals for site for Govt. Printing Office:

This square (754) is 2 streets east of the limits of your advertisement, but within the scope of the law.

We offer the east half of the square 754, 164' 8½" on E and F sts., N. E., by 348 ft. on 3d st., containing 58,317½ sq. ft., at \$1.00 per sq. ft., owned by D. A. Windsor, of Alexandria. There are no improvements of consequence on the square.

Resp'y,

FISH & MILLER, *Agents.*

16.

WASHINGTON, D. C., *Sept. 16th, 1890.*

Hon. WM. WINDOM,
Secretary of Treasury, Washington, D. C.:

DEAR SIR: We beg to offer the following square of ground as a site for the Gov't Printing Office. Although not in the limit described in the advert. its close proximity and convenience to the Capitol, and also the cheapness of the ground, we hope, may be worth your consideration.

Square 754, containing 114,637 square feet, between 2nd and 3rd and E and F sts., N. E.; price, \$1.25 per foot, amounting in all to \$143,296²⁵/₁₀₀.

The names of owners are David A. Windsor, Alexandria, Va.; Dr. L. W. Ritchie, 3259 M st., N.W., and Wash. Danenhower, for S. D. Smoot, Alexandria, Va.

Very respectfully,

CARUSI, EVANS & CARUSI.

17.

WASHINGTON, D. C., *Sep. 11th, 1890.*

Hon. WILLIAM WINDOM,
Secty. of the Treas. and chairman of board:

D'R SIR: We have the honor to submit for a site for the Gov't Printing Office the south half of square 673, as per inclosed plat, fronting 273³ feet on North Capitol and First st., east, and 782⁴ feet on L

street and intermediate street, containing about 213,772 sq. feet, for the sum of two hundred and fifty thousand dollars. We venture to submit this, although it is not in the limits named in your proposals for bids. The city will lay asphalt on N. Capitol this season to M st., and the building of the electric R. R on N. Capitol from B st., N. W., to Boundary will give ample facilities for transit. Material could no doubt be delivered on the railroad to the Capitol.

The tracks of the B. & O. R. R. are located on First st., N. E., and switches could be run into this square if desired. Sewerage facilities are ample.

Very resp'ly,

A. L. BARBER & Co.,
By J. PAUL,
Agents for Owners:
DAVID R. WINDSOR,
Washington, D. C.,
WILLIAM MAHONE,
Petersburgh, Va.

The foregoing bids were scheduled and the Board then proceeded to view by personal inspection the several pieces of property offered. On the 23d of September the Board met at the office of the Secretary of the Treasury, Hon. George S. Batcheller, Acting Secretary of the Treasury, being present and acting in behalf of the Secretary, and, after a full consideration of the various propositions submitted, authorized the chairman to prepare and send a letter, of which the following is a copy:

OFFICE OF THE PUBLIC PRINTER,
Washington, D. C., September 23, 1890.

C. A. SNOW, Esq.,
712 Eighth street, northwest, city.

DEAR SIR: The Board to provide accommodation for the Government Printing Office, having under consideration several parcels of land for such site, have examined the western half of square 678, owned by you. As required by statute, the Board is limited as to price "not above a fair relative value as to other lands which have been sold in the immediate vicinity."

Considering the price higher than the Board is authorized to pay, it is desired that you inform the Board at an early day the lowest price you will accept for said property.

The Board will meet at 11 o'clock Thursday morning, the 25th instant, to consider your answer to this request. Should you desire to be present on that occasion you are invited to do so.

Very respectfully,

GEORGE S. BATCHELLER,
Acting Secretary of Treasury,
Chairman of Board.

In addition to the foregoing authorization, the Public Printer was requested to ascertain and report at a subsequent meeting of the Board the price of any real estate sold recently in the vicinity of the Government Printing Office.

At a meeting of the Board, held on the 25th of September, Mr. C. A. Snow, owner of the west half of square No. 678, city of Washington, was present by invitation, and submitted an amended offer to sell the said property, together with affidavits of property owners in the immediate vicinity of said square. Mr. Snow's amended proposition was as follows:

WASHINGTON, D. C., *September 25, 1890.*

*Gentlemen of the Board of Selection of a
Site for the Government Printing Office :*

GENTLEMEN: In response to your letter of recent date, I have the honor to state that, after consideration of the same and responding thereto, I submit the following amendment of the within proposal: I will sell the west half of said square 678, which contains in square feet 170,648 square feet, more or less, for the sum of \$243,175. Said ground is bounded on the north by G street northeast, on the south by Massachusetts avenue and F street northeast, on the west by North Capitol street, and on the east by an unnamed street or alley 60 feet wide, along entire length of said tract.

Respectfully,

C. A. SNOW.

The foregoing proposition was accompanied by the following affidavits:

WASHINGTON, D. C., *September 24, 1890.*

DISTRICT OF COLUMBIA, ss:

I, Charles A. Shields, being duly sworn, do depose and say that as a real estate broker I sold to Messrs. Lane & Malnati lots 19 and 25 in square 679, containing about 12,862.67 feet of vacant ground, for \$16,078.34, or \$1.25 per foot cash, on or about February 17, 1890.

CHARLES A. SHIELDS,
1405 F street, northwest.

Subscribed and sworn to before me this 24th day of September, 1890.

WILLIAM M. SMITH,
Notary Public.

DISTRICT OF COLUMBIA, ss:

On this day, 24th of September, in the year of our Lord 1890, before me, the subscriber, a notary public in and for the District, personally appeared John Raedy, and made oath in due form of law, deposes and says that I offered the owner of lot No. —, in square No. 677, the sum of \$1.25 per square foot, and said offer was refused, the parties stating that they valued the lot at a higher price; that said offer was made in good faith.

JOHN RAEDY.

Subscribed and sworn before me.

CHARLES W. FLECKHER,
Notary Public.

DISTRICT OF COLUMBIA, ss:

On this 25th day of September, in the year of our Lord 1890, before me, the subscriber, a notary public in and for the District, personally appeared W. H. German, and made oath in due form of law, deposes and says that he had a client who was desirous of purchasing a corner property in the city of Washington; that in accordance with his desires deponent found a piece of property situated at the corner of Massachusetts avenue and North Capitol street, being lots Nos. 1 and 42, square 625, for which he offered the owner \$2.50 per square foot, and which offer was refused, the owner holding said property at \$25,000, being at the rate of about \$4 per square foot.

W. H. GERMAN.

Subscribed and sworn before me.

JOSEPH ROY,
Notary Public.

The Public Printer reported that Mr. McDowell, corner of North Capitol street and Massachusetts avenue, had been informed that \$2.50 per square foot had recently been offered for property at the corner of North Capitol street and Massachusetts avenue, which offer had been declined; that Mr. McDowell had also knowledge of an option at the rate of \$1.50 per square foot for property at the corner of E and North Capitol streets, the option to be accepted in sixty days or followed by a forfeiture of \$1,000; that Mr. McDowell himself owns 7,000 square feet of ground at the corner of E and North Capitol streets, for which he had refused an offer of \$2 per square foot. The Public Printer, in addition, reported that Mr. T. A. Rover, who owns considerable property in the vicinity of the Government Printing Office, values the said property at \$2.50 per square foot, some of which property he had bought two years ago at the rate of \$1.50 per square foot; that Mr. Rover had recently purchased the northeast corner of North Capitol and H streets for \$6 per square foot, with improvements, and that he values the land, without the improvements, at the rate of \$4 per square foot; that Mr. Rover represents that offers which he recently made of \$3 per square foot for land opposite the Government Printing Office on North Capitol street had been declined.

After careful examination of all the bids and after all the bids which had been offered had been inspected personally by each member of the Board, a motion was made and carried unanimously for the acceptance of the amended proposition of Mr. C. A. Snow. The following articles of agreement were thereupon prepared, read, accepted, and signed by Mr. C. A. Snow, owner of the property in question, and by George S. Batcheller, Acting Secretary of the Treasury; Frank W. Palmer, Public Printer; and Edward Clark, Architect of the Capitol:

Articles of agreement, made and entered into this twenty-fifth day of September, A. D. one thousand eight hundred and ninety, between C. A. Snow, party of the first part, and George S. Batcheller, Acting Secretary of the Treasury, Frank W. Palmer, Public Printer, and Edward Clark, Architect of the Capitol, duly authorized hereto, on behalf of the

United States of America, in pursuance of an act of Congress approved August 30, 1890, party of the second part, in the manner following:

The said party of the first part, in consideration of the sum of one dollar to him in hand paid, the receipt whereof is hereby acknowledged, hereby agrees to sell to the party of the second part the following-described real estate, situated in the city of Washington, District of Columbia, to-wit:

The western half of square numbered six hundred and seventy-eight, bounded on the north by G street, on the west by North Capitol street, on the south by Massachusetts avenue and F street, and on the east by the alley, sixty feet wide, as now laid out, for the sum of two hundred and forty-three thousand one hundred and seventy-five dollars (\$243,175), which the said party of the second part hereby agrees to pay to the said party of the first part, in cash, upon the execution, acknowledgment, and delivery to the United States of America, party of the second part, of a proper deed for the conveyance and assuring to them of the fee simple of said premises, free from all incumbrances and with taxes paid to date, which said deed shall contain a clause of general warranty.

The title of the property hereby agreed to be conveyed shall be submitted to and be approved by the Attorney-General of the United States, and all the terms herein agreed upon shall be complied with within five (5) days from the date hereof.

In witness whereof the parties to these presents have hereunto set their hands and seals this 25th day of September, A. D. 1890.

C. A. SNOW. [SEAL.]

GEO. S. BATCHELLER, [SEAL.]

Acting Secretary of the Treasury.

FRANK W. PALMER, [SEAL.]

Public Printer.

EDWARD CLARK, [SEAL.]

Architect of the Capitol.

Signed, sealed, and delivered in the presence of—

C. M. HENDLEY,

H. T. BRIAN.

Mr. Snow then presented an abstract of title to the west half of square No. 678, and the following letter to the Attorney-General was authorized to be presented to that officer, together with the articles of agreement and abstract of title:

WASHINGTON, D. C., *September 26, 1890.*

SIR: The Board to provide a Site for the Government Printing Office, authorized by the sundry civil law approved August 30, 1890, has the honor to transmit to you articles of agreement between C. A. Snow, the owner of the west half of square No. 678, in the city of Washington, and said Board, together with an abstract of title of said ground, and to request that you have the title examined, and if found good that you will have prepared the deed necessary to vest the title in the United States.

By order of the board.

Very respectfully,

GEORGE S. BATCHELLER,
Acting Secretary of the Treasury,
Chairman of the Board.

The ATTORNEY GENERAL, *City.*

At a meeting of the Commission, held at the Treasury Department on Tuesday, December 2, the following resolutions were offered and adopted:

Resolved, That the President of the Board be instructed to communicate with the Attorney-General and ascertain whether the title to west half of square 678 has been perfected, so that the parties offering the same can convey complete and perfect title.

It was further resolved that, if not so perfected, the Attorney-General be requested to proceed as early as practicable to procure the property by condemnation, as authorized by law.

In accordance with the foregoing resolutions the Secretary of the Treasury addressed a communication to the Attorney-General in the following language:

TREASURY DEPARTMENT,
Washington, December 3, 1890.

SIR: At a meeting, held yesterday, of the Commission to secure a Site for a Building for the Government Printing Office I was instructed, by resolution, to ascertain whether the title to the west half of square 678, which has been selected, has been perfected, so that the owners of the property can convey a complete and perfect title to the United States.

Respectfully yours,

W. WINDOM,
Secretary.

Hon. W. H. H. MILLER,
Attorney-General, Washington, D. C.

To the foregoing the Attorney-General made this response:

DEPARTMENT OF JUSTICE,
Washington, D. C., December 3, 1890.

DEAR SIR: Your note of this date, in reference to the property under consideration for the Government Printing Office, viz, the west half of square 678, is received. The title has not been perfected.

Yours, truly,

W. H. H. MILLER,
Attorney-General.

Hon. WILLIAM WINDOM,
Secretary of the Treasury.

The efforts of the Commission to obtain a title to the property heretofore described, by negotiation, having failed, the Chairman of the Board asked the Attorney-General to commence proceedings to procure the same by condemnation. The following is a copy of the letter addressed to the Attorney-General:

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., December 4, 1890.

SIR: In view of the fact, as stated in your letter of the 3d instant, that the title to the west half of square 678, which has been selected as a site for the Government Printing Office, has not been perfected by the parties offering to sell the same to the Government, I am instructed,

by resolution of the Commission, to ask that proceedings may be instituted as early as possible to procure said property by condemnation, as authorized by law.

Respectfully yours,

W. WINDOM,
Secretary.

Hon. W. H. H. MILLER,
Attorney-General, Washington, D. C.

By the terms of the act under which the Commission were appointed they were authorized to acquire suitable ground for a site for the Government Printing Office by negotiation or condemnation. They were not required to advertise for proposals; but, in order to prevent even the appearance of partiality or unjust discrimination, they authorized the public notice to owners of real estate, a copy of which is furnished in another part of this report. They fixed the boundaries therein described, for the following reasons:

First. Because they believed the public interest would be served by selecting, if possible, a site adjoining or adjacent to the present Government Printing Office.

Second. Because facilities for prompt communication between the Capitol, the several Executive and Judicial Departments, and the Government Printing Office require that the latter shall be at as short a distance from all of the former as possible.

Third. That the property to be purchased should be of such increased area in comparison with the site of the present building as would meet the requirements of this branch of the Government service for the present and a reasonable period in the future.

Fourth. Because the land selected is nearer to all railroad and steamboat lines than the site of the present building, and would thus diminish time and expense in freight transportation.

It will be seen at a glance that the consideration of nearness to the Capitol and the several Departments precluded the practicability of selecting a site north of H street, because such a selection would have increased rather than diminished the distance between the several objective points. The boundary of First street east was as far east as was deemed practicable, without imposing upon employes and the public the necessity of crossing and recrossing the tracks of the Baltimore and Ohio Railway. Ninth street, on the west, and B street north, on the south, were fixed as boundaries in those directions, so that no undue advantage might be taken by property-holders of the general purpose of the Commission to make a selection as near as possible, all other considerations being equal, to the vicinity of the present plant.

The Commission have taken especial pains to investigate the character of the soil on the tract selected, with reference to its fitness for a foundation for the proposed building, and from all sources of information at their command are convinced that a good foundation may be established thereon at a reasonable cost.

The Commission, when they signed in behalf of the Government the articles of agreement herein transmitted, entertained the hope that they might announce the purchase of this property, with good and sufficient title, by negotiation, and thus facilitate the praiseworthy movement inaugurated by Congress for the construction of a fireproof Government Printing Office. But complications affecting the question of title have arisen, so that the Attorney-General has not thus far been able to report exclusive and valid ownership in Mr. Snow, and by unanimous vote of the board the Attorney-General has been requested to commence proceedings for condemnation of the property at the earliest day possible.

The area of the present site of the Government Printing Office is, in round numbers, 66,000 square feet. The site selected by the Commission embraces more than 170,000 square feet, or nearly three times the area of the site now in use.

For convenience of reference, a diagram showing the location of blocks of land in which are located tracts and lots offered as sites for the Government Printing Office is herewith furnished; also, a tabular statement showing the names and numbers of lots and blocks and the prices at which the several pieces of property were offered.

All of which is respectfully submitted.

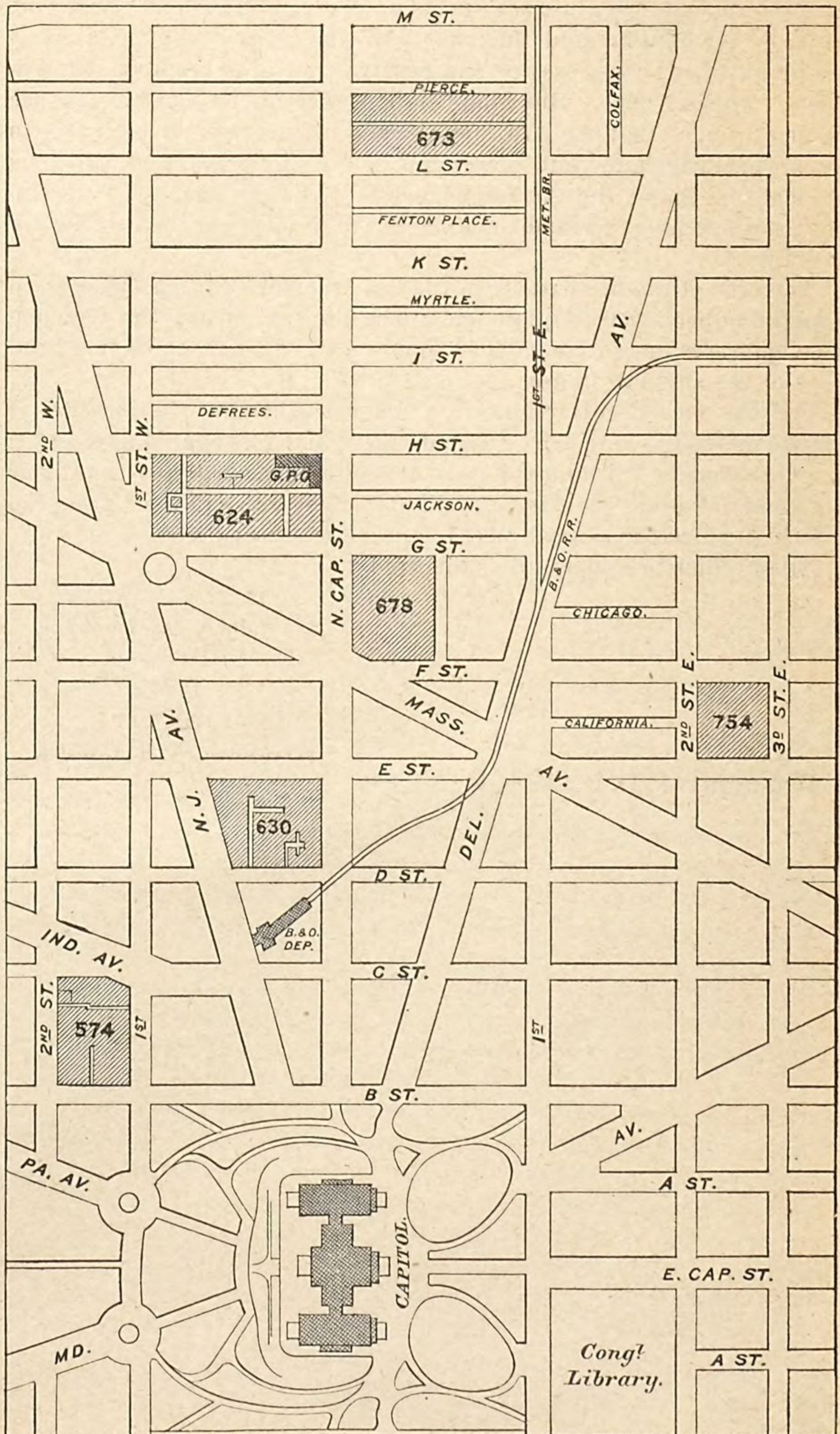
WILLIAM WINDOM,
Secretary of the Treasury.

F. W. PALMER,
Public Printer.

EDWARD CLARK,
Architect U. S. Capitol.

WASHINGTON, D. C., *December 8, 1890.*

Diagram showing location of property offered as sites for the Government Printing Office.



Schedule of bids received for sites for the Government Printing Office.

	Agent and owner.	Square.	Lot.	Square feet.	Price per square foot.	Amount.	Improvements and price.	Total.	Remarks.
13	Plant & Turpin, 1429 New York avenue. Owners: Samuel Emery, Matthew G. Emery, Thos. W. Smith, estate of W. W. Corcoran, E. A. Divil- liers, Eugene Carusi, Emily N. Meley, Anton Eberly, Louis H. Schneider, A. L. and John M. Esleman.	574	1..... A to F of 3, sub f. of 3, b. g., 420, R. and S. O, P, and Q..... M and N..... 13..... 12..... 11..... 9..... 18..... 19..... 17.....	40, 384 66, 216 11, 034 4, 359 2, 101 2, 101 2, 101 2, 101 1, 065 1, 065 1, 151	\$1.84+ 1.93+ 4.66+ 2.73+ 3.92+ 4.16+ 5.71+ 5.37+ 5.73+ 5.73+ 10.42+	..... ..... ..... ..... ..... ..... ..... ..... ..... ..... .....	Including im- provements. do..... do..... do..... do..... do..... do..... do..... do..... do..... do.....	\$74, 691. 00 127, 808. 80 51, 500. 00 11, 919. 50 8, 252. 50 8, 752. 50 12, 000. 00 11, 303. 00 6, 102. 50 6, 102. 50 12, 000. 00 330, 432. 50	Situated between First and Second streets, W., and B and C streets and Indiana avenue, N. W.
12	Carusi, Evans & Carusi..... Owners: Acker Bros., A. Carry, M. Thomas, S. M. Plumley.	630	.....	45, 241 36, 000 4, 400 7, 066 92, 707	2.21+ 1.50 4.54+ 2.83+ 2.09+	\$100, 000. 00 54, 000. 00 20, 000. 00 20, 000. 00 194, 000. 00	..... ..... ..... ..... .....	100, 000. 00 54, 000. 00 20, 000. 00 20, 000. 00 5, 200. 00	Between D and E streets and New Jersey avenue and North Capitol street, N. W., containing about 190, 000 square feet. See bid.
11	Fish & Miller, agents, 1213 F street. Owner: Morris Keim, Springfield, Md.	630	Part of lot 4 ..	3, 250	1.60	5, 200. 00	.....	5, 200. 00	22 feet on New Jersey avenue by 147 feet.
17	A. L. Barber & Co., by J. Paul, agt.. Owners: David R. Windsor, Wash- ington, D. C.; William Mahone, Petersburg, Va.	South ½ 673	.....	About 213, 772	1.16+	250, 000. 00	.....	250, 000. 00	273 feet on North Capitol and First streets, E., and 782 feet on L street and inter- mediate street.
14	C. A. Snow, owner, 710 Eighth street, N. W.	West ½ 678	3, 4, 5, 6, 7, and 8	150, 000	1.50	225, 000. 00	.....	225, 000. 00	See bid.
15	Fish & Miller, agents, 1213 F street. Owner: D. A. Windsor, of Alex- andria.	East ½ 754	.....	170, 674½ 170, 648 58, 317½	1.46+ 1.42+ 1.00	249, 700. 00 243, 175. 00 58, 317. 50	..... ..... .....	249, 700. 00 243, 175. 00 58, 317. 50	Amended offer. 164 feet 8½ inches on E and F streets, N. E., by 348 feet on Third street.
16	Carusi, Evans & Carusi..... Owners: Dr. L. W. Ritchie, 3259 M street, N. W.; David A. Windsor, and Wash. Danenhowe, for S. D. Smoot, Alexandria, Va.	754	.....	114, 637	1.25	143, 296. 25	.....	143, 296. 25	Between Second and Third and E and F streets, N. E.

NOTE.—The figures in black were supplied by the Board.

* Including improvements.

Schedule of bids received for sites for the Government Printing Office.

	Owners.	Square.	Lot.	Square feet.	Price per square foot.	Amount.	Improvements and price.	Total.	Remarks.
5	Andrew Gleeson and Ellen Gleeson, 802 First street, N. W.	624	A, B, 1, 2, and 3.	14, 170	\$3. 00	\$42, 510. 00	\$20, 000	\$62, 510. 00	North Capitol street, corner Jackson alley.
3	Mary E. Harvey, 27 G street, N. W.	624	11.....	1, 392	2. 00	2, 784. 00	1, 000	3, 784. 00	G street, between First and North Capitol streets, N. W., 16 feet front on G street by 87 feet deep.
4	John F. Kelly, 31 G street, N. W. {	624	East part of lot 13.	2, 804	2. 50	7, 010. 00	Including im- provements.	7, 010. 00	
		624	East part of lot 25.	2, 804	2. 25	6, 309. 00	Including im- provements.	6, 309. 00	
1	Timothy Costello, 35 G street, N. W.	624	35 G street, N. W.	5, 600	2. 00	11, 200. 00	Including im- provements.	11, 200. 00	Fronting 32 feet on G street.
2	John G. Wolfe, 305 H street, N. E....	624	15.....	4, 206	2. 25	9, 463. 50	Including im- provements.	9, 463. 50	
	Alexander Bruce, 45 G street, N. W.	624	Parts of sub- lots 19 and 20.	3, 000	2. 00	6, 000. 00	Assessed val- ue. [\$400.]	6, 400. 00	
	D. Connell, 741 First street, N. W....	624	43.....	4, 206	2. 25	9, 463. 50	4, 000	13, 463. 50	
7	John J. Fuller, 58 H street, N. W. {	624	44.....	4, 206	2. 25	9, 463. 50	6, 000	15, 463. 50	
		624	45.....	4, 206	2. 25	9, 463. 50	4, 000	13, 463. 50	
8	John Elbert, 54 H street, N. W.....	624	46.....	3, 000	2. 25	6, 750. 00	3, 000	9, 750. 00	
10	M. Gorman, 823 Second street, N. E.	624	Sublots 81 and 82.	6, 660	1. 75	11, 655. 00	.....	11, 655. 00	
				56, 254	*3. 03+			170, 472. 00	

NOTE.—The figures in black were supplied by the Board.

* Including improvements.

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No. 1.—Financial statement of the business of the Government Printing Office for the fiscal year ended June 30, 1890, and the condition of the appropriations July 1, 1890.

Salaries, office of Public Printer, 1890:

Appropriation, act February 26, 1889.....	\$15,100.00
Disbursed for salaries during fiscal year.....	14,408.91
Balance July 1, 1890.....	691.09

Contingent expenses, office of Public Printer, 1889:

Balance July 1, 1889.....	795.64
Disbursed during fiscal year.....	200.30
Balance July 1, 1890.....	595.34

Contingent expenses, office of Public Printer, 1890:

Appropriation, act February 26, 1889.....	3,000.00
Disbursed during fiscal year.....	2,834.67
Balance July 1, 1890.....	165.33

Printing and binding, 1887 (deficiency, act February 1, 1888):

Balance July 1, 1889.....	1,559.17
Disbursed during the fiscal year.....	68.50
Balance July 1, 1890.....	1,490.67

Printing and binding, 1887 and 1888 (leaves of absence):

Balance July 1, 1889.....	5,779.41
Disbursed for labor during fiscal year.....	5,020.76
Balance July 1, 1890.....	758.65

Printing and binding, 1888 and 1889 (Record printers):

Balance July 1, 1889 (no disbursements).....	2,067.82
--	----------

Printing and binding, 1888 and 1889 (15 per cent. to night force):

Balance July 1, 1889 (no disbursements).....	66.03
--	-------

Printing and binding, 1889:

Balance July 1, 1889.....	\$185,864.03
Received from sales waste paper, documents, and printing.....	25,805.54
Disbursed for labor during fiscal year.....	59,366.81
Disbursed for lithographing and engraving.....	28,312.90
Disbursed for printing paper.....	28,413.88
Disbursed for material and supplies.....	34,181.37
	150,274.96
Balance July 1, 1890.....	61,394.61

Printing and binding, 1889 (15 per cent. additional to night force):

Balance July 1, 1889.....	8,334.98
(No disbursements.)	

Printing and binding, 1890:

Appropriation, act March 2, 1889.....	2,218,000.00
Appropriation, act December 19, 1889.....	150,000.00
Appropriation, act April 4, 1890.....	222,000.00
Appropriation, act June 7, 1890.....	90,000.00
Received from sales waste paper, extra documents, and printing.....	233,960.77
	2,913,960.77
Disbursed for labor during fiscal year.....	2,003,804.01
Disbursed for lithographing and engraving.....	30,507.21
Disbursed for printing paper.....	407,470.88
Disbursed for material and supplies.....	294,147.59
	2,735,929.69
Balance July 1, 1890.....	178,031.08

No. 1.—*Financial statement of the business of the Government Printing Office, etc.*—Cont'd.

Agricultural Report, 1888:

Balance July 1, 1889		\$117, 153. 45
Disbursed for labor during fiscal year.....	\$59, 197. 44	
Disbursed for lithographing and engraving.....	14, 410. 10	
Disbursed for printing paper	27, 518. 00	
Disbursed for material and supplies.....	12, 075. 36	
		<u>113, 200. 90</u>
Balance July 1, 1890		<u>3, 952. 55</u>

Agricultural Report, 1889:

Appropriation, joint resolution, December 19, 1889		200, 000. 00
Disbursed for labor during fiscal year.....	16, 140. 10	
Disbursed for lithographing and printing.....	242. 00	
Disbursed for printing paper.....	36, 054. 80	
Disbursed for material and supplies.....	7, 741. 79	
		<u>60, 178. 69</u>
Balance July 1, 1890		<u>139, 821. 31</u>

Publication of the Tenth Census Reports:

Balance July 1, 1889		15, 272. 41
Disbursed for labor during fiscal year.....	103. 19	
Disbursed for lithographing and engraving.....	155. 00	
		<u>258. 19</u>
Balance July 1, 1890		<u>15, 014. 22</u>

Removal and storage of certain material, Government Printing Office:

Balance July 1, 1889	3, 604. 86	
Appropriation, act April 4, 1890	4, 000. 00	
		<u>7, 604. 86</u>
Disbursed for rent during fiscal year		<u>3, 719. 88</u>
Balance July 1, 1890.....		<u>3, 884. 98</u>

Printing Annual Bulletin (1887) Bureau of Ethnology:

Balance July 1, 1889.....		282. 01
Disbursed for labor during fiscal year.....	116. 08	
Disbursed for printing paper.....	163. 85	
		<u>279. 93</u>
Balance July 1, 1890.....		<u>2. 08</u>

Publication of Consular Reports on Cattle and Dairy Farming:

Balance July 1, 1889 (no disbursements).....		<u>7, 830. 22</u>
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Printing Third Annual Report Commissioner of Labor:

Balance July 1, 1889.....		8, 197. 75
Disbursed for labor during fiscal year		<u>186. 40</u>
Balance July 1, 1890.....		<u>8, 011. 35</u>

Fourth Annual Report Commissioner of Labor:

Balance July 1, 1889.....		16, 947. 78
Disbursed for labor during fiscal year.....	5, 978. 42	
Disbursed for paper	3, 880. 79	
Disbursed for material and supplies	1, 542. 20	
		<u>11, 401. 41</u>
Balance July 1, 1890.....		<u>5, 546. 37</u>

Printing Fourth and Fifth Annual Reports Bureau of Animal Industry, 1887 and 1888:

Balance July 1, 1889.....		37, 930. 00
Disbursed for labor during fiscal year.....	10, 133. 36	
Disbursed for lithographing and engraving.....	2, 601. 83	
Disbursed for printing paper	5, 529. 82	
Disbursed for material and supplies	1, 486. 61	
		<u>19, 751. 62</u>
Balance July 1, 1890.....		<u>18, 178. 38</u>

No. 1.—*Financial statement of the business of the Government Printing Office, etc.—Cont'd.*

Engine and boiler, Government Printing Office:

Balance July 1, 1889.....	\$4,850.00
Disbursed for compound engine.....	4,850.00

Balance July 1, 1891.....

Enlargement of building, Government Printing Office:

Balance July 1, 1889.....	1,593.35
Disbursed for material and supplies.....	1,593.06

Balance July 1, 1890..... .29

Printing decisions Department of the Interior regarding public lands and pensions:

Balance July 1, 1889.....	866.53
Disbursements for labor during fiscal year.....	304.51

Balance July 1, 1890..... 562.02

No. 2.—*Recapitulation of statement of condition of appropriations, July 1, 1890, as shown by ledger.*

RESOURCES.

Salaries Office of Public Printer, 1890, act of February 26, 1890.....	\$15,100.00
Contingent expenses, office of Public Printer:	
1889, balance July 1, 1889.....	795.64
1890, act February 26, 1889.....	3,000.00
Public printing and binding:	
1887, act February 1, 1888, balance July 1, 1889.....	1,559.17
1887 and 1888 (leaves of absence), balance July 1 1889.....	5,779.41
1888 and 1889 (Record printers), balance July 1, 1889.....	2,067.82
1888 and 1889 (15 per cent. to night force), balance July 1, 1889.....	66.03
1889, balance July 1, 1889.....	\$185,864.03
Sales of waste paper, documents, and printing.....	25,805.54
	211,669.57
1889, act March 2, 1889, balance July 1, 1889.....	8,334.98
1890, act March 2, 1889.....	2,218,000.00
1890, act December 19, 1889.....	150,000.00
1890, act April 4, 1890.....	222,000.00
1890, act of June 7, 1890.....	90,000.00
Sales of waste paper, documents, and printing.....	233,960.77
	2,913,960.77
Printing Annual Report (1888) Commissioner of Agriculture, balance July 1, 1889.....	117,153.45
Printing Annual Report (1889) Secretary of Agriculture, joint resolution December 19, 1889.....	200,000.00
Publication of the Tenth Census Reports, balance July 1, 1889.....	15,272.41
Removal and storage of certain material, Government Printing Office:	
Balance July 1, 1889.....	3,604.86
Act April 4, 1890.....	4,000.00
	7,604.86
Printing Annual Bulletins (1887) Bureau of Ethnology, balance July 1, 1889.....	282.01
Publication of Consular Reports on Cattle and Dairy Farming, balance July 1, 1889.....	7,830.22
Printing Third Annual Report Commissioner of Labor, balance July 1, 1889.....	8,197.75
Printing Fourth Annual Report Commissioner of Labor, balance July 1, 1889.....	16,947.78
Printing Fourth and Fifth Annual Reports Bureau of Animal Industry (1887 and 1888), balance July 1, 1889.....	37,930.00
Enlargement of building, Government Printing Office, balance July 1, 1889.....	1,593.35
Engine and boiler, Government Printing Office, balance July 1, 1889.....	4,850.00
Printing decisions Department of the Interior regarding public lands and pensions, balance July 1, 1889.....	866.53
	\$3,580,861.75

No. 2.—*Recapitulation of statement of condition of appropriations, etc.*—Continued.

DISBURSEMENTS.

Pay of employés.....	\$2, 160, 419. 58
Paper for printing.....	509, 032. 02
Lithographing and engraving	76, 229. 04
Material and supplies, other than paper for printing	361, 337. 86
Salaries, Office of Public Printer, 1890	14, 408. 91
Contingent expenses, Office of Public Printer:	
1889.....	200. 30
1890.....	2, 834. 67
	3, 124, 462. 38

UNEXPENDED BALANCES.

Salaries, Office of Public Printer, 1890.....	\$691. 09
Contingent expenses, Office of Public Printer:	
1889.....	595. 34
1890.....	165. 33
Public printing and binding:	
1887 (act February 1, 1888).....	1, 490. 67
1887 and 1888 (leaves of absence).....	758. 65
1888 and 1889 (Record printers)	2, 067. 82
1888 and 1889 (15 per cent. to night force).....	66. 03
1889.....	61, 394. 61
1889 (act March 2, 1889, 15 per cent. additional to night force).....	8, 334. 98
1890.....	178, 031. 08
Printing Annual Report Commissioner of Agriculture, 1888..	3, 952. 55
Printing Annual Report Secretary of Agriculture, 1889.....	139, 821. 31
Publication of the Tenth Census Reports	15, 014. 22
Removal and storage of certain material, Government Printing Office	3, 884. 98
Printing Annual Bulletin (1887), Bureau of Ethnology.....	2. 08
Publication of Consular Reports on Cattle and Dairy Farming.	7, 830. 22
Printing Third Annual Report Commissioner of Labor.....	8, 011. 35
Printing Fourth Annual Report Commissioner of Labor....	5, 546. 37
Printing Fourth and Fifth Annual Reports Bureau of Animal Industry, 1887 and 1888	18, 178. 38
Enlargement of building, Government Printing Office	. 29
Printing decisions Department of the Interior regarding public lands and pensions.....	562. 02
	456, 399. 37
	\$3, 580, 861. 75

Receipts during fiscal year ending June 30, 1890.

Received from sales of extra documents, waste paper, and for printing, which sum has been deposited in the Treasury to the credit of the appropriations for printing and binding.....	\$62, 235. 41
Received from sales of waste gold leaf, old machinery, etc., which has been deposited in the Treasury to the credit of receipts from miscellaneous sources.....	12, 009. 98
	74, 245. 39

No.3.—*Classified statement of payments, by appropriations, for fiscal year ended June 30, 1890.*

Appropriation.	Labor.	Paper.	Material and supplies.	Lithograph- ing and engraving.	Total.
Salaries, Office of Public Printer, 1890.	\$14,408.91	-----	-----	-----	\$14,408.91
Contingent expenses, Office of Public Printer:					
1889	-----	-----	\$200.30	-----	200.30
1890	-----	-----	2,834.67	-----	2,834.67
Public printing and binding:					
1887	68.50	-----	-----	-----	68.50
1887 and 1888	5,020.76	-----	-----	-----	5,020.76
1889	59,366.81	\$28,413.88	34,181.37	\$28,312.90	150,274.96
1890	2,003,804.01	407,470.88	294,147.59	30,507.21	2,735,929.69
Printing Annual Report Commis- sioner of Agriculture:					
1888	59,197.44	27,518.00	12,075.36	14,410.10	113,200.90
1889	16,140.10	36,054.80	7,741.79	242.00	60,178.69
Publication of the Tenth Census Re- ports	103.19	-----	-----	155.00	258.19
Removal and storage of certain ma- terial, Government Printing Office.	-----	-----	3,719.88	-----	3,719.88
Printing Annual Bulletins (1887) Bureau of Ethnology	116.08	163.85	-----	-----	279.93
Printing Third Annual Report Com- missioner of Labor	186.40	-----	-----	-----	186.40
Printing Fourth Annual Report Commissioner of Labor	5,978.42	3,880.79	1,542.20	-----	11,401.41
Printing Fourth and Fifth Annual Reports Bureau of Animal Indus- try, 1887 and 1888	10,136.36	5,529.82	1,486.61	2,601.83	19,751.62
Engine and boiler, Government Print- ing Office	-----	-----	4,850.00	-----	4,850.00
Enlargement of building, Govern- ment Printing Office	-----	-----	1,593.06	-----	1,593.06
Printing decisions of Department of the Interior regarding public lands and pensions	304.51	-----	-----	-----	304.51
Total	2,174,828.49	509,032.02	364,372.83	76,229.04	3,124,462.38

No. 4.—*Statement showing expenditures for labor, material, paper, lithographing, and engraving during fiscal years 1883 to 1890, both inclusive.*

Appropriations.	1883.	1884.	1885.	1886.
Printing and binding	\$2, 589, 512. 71	\$2, 633, 111. 87	\$2, 398, 351. 51	\$2, 572, 575. 67
Agricultural reports	156, 416. 92	115, 705. 39	135, 023. 75	93, 347. 98
Reports of the Tenth Census	141, 415. 29	292, 890. 08	97, 689. 76	89, 317. 34
Removal and storage	1, 000. 00	2, 000. 00	3, 400. 00	3, 702. 97
Repairs, Government Printing Office		12, 360. 17	4. 69	
Bureau of Animal Industry, 1885				3, 616. 11
Total	2, 888, 374. 92	3, 056, 067. 51	2, 634, 469. 71	2, 762, 560. 07

Appropriations.	1887.	1888.	1889.	1890.
Printing and binding	\$2, 282, 101. 44	\$2, 373, 098. 19	\$2, 598, 146. 35	\$2, 891, 293. 91
Agricultural Reports	113, 553. 76	211, 826. 08	240, 713. 71	173, 378. 59
Reports of the Tenth Census	57, 282. 14	20, 572. 43	41, 650. 68	258. 19
Removal and storage	7, 897. 26	4, 746. 40	5, 148. 51	3, 719. 88
Bureau of Animal Industry, 1885	16, 041. 74	362. 07		
Bureau of animal industry, 1887, 1888				19, 751. 62
First Labor Report	11, 488. 95			
Second Labor Report	8, 592. 82	4, 217. 57		
Bulletins, Bureau of Ethnology	1, 699. 67	788. 35	229. 91	279. 93
Protecting office from fire	1, 420. 57	6, 579. 43		
Postal Laws and Regulations		17, 475. 00		
Consular reports on cattle and dairy farming		8, 898. 98	48, 270. 80	
Third Labor Report			16, 802. 25	186. 40
Fourth Labor Report			2, 254. 82	11, 401. 41
Enlargement of building, Government Printing Office			14, 406. 65	1, 593. 06
Engine and boiler, Government Printing Office			9, 150. 00	4, 850. 00
Printing decisions of Department of the Interior regarding public lands and pensions			10, 133. 47	304. 51
Printing Report (1887) on Commerce and Navigation			1, 093. 82	
Total	2, 500, 078. 35	2, 648, 564. 50	2, 988, 001. 03	3, 107, 017. 50

Estimate of appropriations for public printing and binding for fiscal year ending June 30, 1892, as submitted to the Secretary of the Treasury for presentation to the second session of the Fifty-first Congress.

Wages	\$1, 866, 808. 44
Materials	346, 261. 25
Paper	555, 865. 00
Congressional Record	174, 982. 00
Lithographing and engraving	75, 000. 00
	3, 018, 916. 69

No. 5.—*Statement showing the disbursements on account of salaries and contingent expenses in the Office of the Public Printer during the fiscal year ended June 30, 1890.*

Public Printer.....	\$4, 500.00
Chief Clerk (358 days).....	2, 354.32
Clerk, at \$1,800 per annum (361 days).....	1, 780.00
Clerk, at \$1,800 per annum (319 days).....	1, 570.88
Clerk, at \$1,600 per annum (344 days).....	1, 504.33
Clerk, at \$1,600 per annum.....	1, 600.00
Clerk, at \$1,400 per annum (286 days).....	1, 099.38
	14, 408.91
Contingent expenses of the office.....	3, 034.97
Total.....	17, 443.88

No. 6.—*Statement showing the disbursements on account of the public printing and binding (except Congressional Record) for the fiscal year ended June 30, 1890.*

Wages of employes.....	\$1, 995, 960.74
Improvement and repairs to building:	
Plans and specifications.....	\$991.49
Erecting shafting.....	350.00
2 tables.....	92.00
Painting walls.....	292.00
2 radiators.....	40.00
Iron stairway.....	590.35
Heater.....	1, 160.00
Covering 63 window awnings, at \$2.00.....	126.00
Graining rooms.....	25.00
Plumbing and gas fitting.....	2, 431.09
Electric lighting supplies.....	1, 559.91
265 lamps, at 85 cents.....	225.25
152 lamps, at 75 cents.....	390.00
100 lamps.....	74.34
Repairing roofs, labor, etc.....	2, 473.07
Lightning rods and repairs.....	240.40
Ventilator and pipe.....	478.56
Paint.....	519.04
Brick.....	346.80
Lumber.....	4, 426.66
Sand.....	111.35
Lime.....	54.50
Cement.....	187.15
Stone.....	124.58
Screws.....	92.61
Nails.....	99.60
Hinges.....	35.15
Glass.....	211.67
Iron and steel.....	212.22
Removing debris.....	145.33
Miscellaneous repairs.....	539.15
	18, 645.27
Machinery, tools, implements, etc.:	
Stand press No. 1.....	60.00
Repairing 2 printing presses.....	50.00
1 proof press.....	36.34
1 printing press No. 5.....	1, 480.00
1 printing press No. 3.....	1, 225.00
1 printing press No. 2.....	3, 500.00
1 sewing machine.....	150.00
1 beveling and trimming machine.....	200.00
1 transmission-power machine.....	500.00
1 rolling machine.....	350.00
1 indexing machine.....	375.00
1 combination machine.....	165.00
Truck wheels.....	266.94

No. 6.—*Disbursements on account of the public printing and binding, etc.*—Continued.

Machinery, tools, implements, etc.—Continued.

Emery wheels	\$114.00
1 elevator	1,870.00
Shafting, pulleys, etc.	3,841.83
1 casting box	75.00
3 backing pans	75.00
1 turnabout	75.00
1 indicator	60.00
6 pairs rollers	160.00
3 motor fans	100.00
4 presser bars	12.00
2 back girts	20.90
500 clips, at 7 cents	35.00
1,000 clips, at 10 cents	100.00
12 backer catches	23.40
6 treadle catches	12.00
6 treadles, at \$2	12.00
2 bevel pinions	11.70
50 pinions, at 35 cents	15.75
1 pinion gear	2.00
1 cylinder reel gear	20.00
1 iron gear	10.00
1 worm gear	2.50
1 lift	30.00
54 metalline boxes	136.89
24 pieces lithograph stones, at \$1.25	30.00
50 pounds oil stones, at 30 cents	15.00
99 pounds oil stones, at 32 cents	31.68
1 grindstone	2.75
230 pounds sandstone, at 5 cents	11.50
1 imposing stone	31.50
Steam packing	97.58
Steam jacketing	39.76
391½ square feet lace leather, at 15 cents	58.69
12 lubricator cups, at 45 cents	5.40
72 lubricator cups, at 40 cents	28.80
400 lubricators, at 5 cents	20.00
300 lubricators, at 3 cents	9.00
Belting:	
200 feet, at 4 cents	8.00
10 feet, at 11 cents	1.10
200 feet, at 12 cents	24.00
900 feet, at 14.4 cents	200.40
200 feet, at 28.8 cents	57.60
200 feet, at 34.4 cents	68.80
78 feet, at 46 cents	35.88
120 feet, at 51.6 cents	61.92
76 feet, at 81.6 cents	62.43
57½ feet, at \$4.50	269.80
126 feet	394.27
4⅜ inches	1.14
Type, various kinds	9,184.38
Brass rule	1,336.26
25 dozen side sticks	212.50
12 composing sticks, at \$1.35	16.20
48 composing sticks, at 99 cents	47.52
48 reversible knee-sticks, at 82.5 cents	39.60
120 galleys, at \$1.62½	195.00
100 galleys, at \$2.02½	202.50
100 galleys, at \$2.25	225.00
11 double stands, at \$4.05	44.55
1 double stand	8.10
108 keys for quoins, at 52.5 cents	56.70
24 keys for quoins, at 67.5 cents	16.20

No. 6.—*Disbursements on account of the public printing and binding, etc.*—Continued.

Machinery, tools, implements, etc. - Continued:

33 pairs cases.....	\$49.36
124 dozen quoins, at \$2.25.....	279.00
5,000 quoins, at 36 cents per 100.....	18.00
500 quoins.....	1.80
Printing tools.....	206.02
Files, assorted sizes.....	117.71
50 sets book saws, at \$9.....	450.00
2 saws, at \$4.50.....	9.00
4 circular saws, at \$2.52.....	10.08
56 circular saws, at \$2.07.....	115.92
7 circular saws.....	7.56
1 circular saw.....	3.75
1 saw.....	1.50
2 saws, at \$1.40.....	2.80
Saw-blades.....	10.15
4 paper-cutter knives, at \$24.91.....	99.64
10 plow-knives, at \$8.....	80.00
18 knives, at \$7.36.....	132.48
25 cutting-machine knives, at \$6.75.....	168.75
23 cutting-machine knives.....	290.82
13 knives, at \$3.50.....	45.50
2 dozen paring-knives, at \$2.50.....	5.00
1 drum-press knife.....	2.50
40 shoe knives, at 80 cents.....	32.00
1 knife.....	.07
1 cutter.....	8.93
6 cutters, at \$2.15.....	12.90
4 cutters, at \$1.50.....	6.00
1 cutter.....	2.50
1 dozen cutters.....	15.00
6 cutters, at 55 cents.....	3.30
1 rotary blade cutter.....	3.50
12 round cutters.....	3.00
5 cutting tubes.....	5.50
344 bolts.....	15.10
19 rubber stamps.....	8.40
2 Patent Office stamps.....	5.00
3 hand stamps.....	15.00
1 International Marine Conference stamp.....	20.50
2 copper glue-kettles.....	64.00
1 copper kettle.....	2.00
1 tin kettle.....	1.00
1 gluepot.....	.50
2 dozen gluepots.....	18.00
1 marking pot.....	.40
Pans for kettles.....	4.00
4 dozen hammers, at \$13.50.....	54.00
2 hammers, at \$1.25.....	2.50
1 hammer.....	1.13
2 dozen hammer handles, at 75 cents.....	1.50
1 sledge-hammer handle.....	1.50
6 dozen pairs shears, at \$6.99.....	27.96
1 dozen pairs shears.....	5.75
12 pairs shears, at \$2.....	24.00
3 pairs shears, at \$1.75.....	5.25
29 pairs shears, at \$1.25.....	36.25
6 pairs shears, at 75 cents.....	4.50
Machine screws.....	6.09
35 screw-drivers.....	20.28
Sewing-machine fixtures.....	435.50
13 dozen glue brushes, at \$29.60.....	384.80
9 dozen glue brushes, at \$10.25.....	92.25
8 dozen glue brushes, at \$5.95.....	53.55

No. 6.—*Disbursements on account of the public printing and binding, etc.*—Continued.

Machinery, tools, implements, etc.—Continued:		
3 dozen glue brushes, at \$1.90.....	\$5.70	
12 glue brushes.....	18.90	
2 glue brushes.....	3.33	
1 gumming brush.....	1.90	
2 gumming brushes, at \$5.50.....	11.00	
24 scrub brushes, at 22 cents.....	5.28	
6 dozen dustbrushes, at \$5.50.....	33.00	
$\frac{1}{2}$ dozen dustbrushes, at \$6.....	3.00	
6 dozen dustbrushes, at \$5.....	30.00	
4 wall brushes, at \$1.40.....	5.60	
6 dozen pick-brushes, at \$3.90.....	23.40	
1 pick-brush.....	.33	
2 brushes for gold-cleaning machine, at \$20.....	40.00	
2 sets brusher for dynamo, at \$3.....	6.00	
6 stereotype beating brushes, at \$7.....	42.00	
6 Clinton pound brushes.....	10.00	
5 dozen goat-hair brushes, at \$7.45.....	14.90	
$\frac{1}{2}$ dozen whitewash brushes, at \$21.60.....	10.80	
24 whitewash brushes, at \$1.90.....	45.60	
11 dozen lye brushes, at \$4.10.....	45.10	
2 dozen lye brushes, at \$11.90.....	23.80	
1 lye brush.....	.99	
5 striping brushes.....	3.80	
Miscellaneous brushes.....	25.20	
48 cam-rolls, at 50 cents.....	24.00	
2 cams, at \$3.....	6.00	
2 edge rolls.....	11.00	
3 index rolls.....	23.50	
8 cast-iron chases.....	8.84	
104 wrought-iron chases.....	421.20	
12 book chases.....	140.40	
540 pounds castings, at 3 cents.....	16.20	
4,088 pounds castings, at 3.5 cents.....	143.09	
433 pounds castings, at 4 cents.....	17.32	
4 pounds castings, at 5 cents.....	.20	
35 pounds castings, at 6 cents.....	2.10	
11 $\frac{1}{2}$ pounds castings, at 27 cents.....	3.10	
72 loopers, at \$1.....	72.00	
1 set grate-bars.....	115.00	
24 grate-bars.....	40.80	
2 chains for presses.....	50.00	
Repairing 14 wire heads.....	34.63	
15 rolls cloth, at \$4.25.....	63.75	
3 $\frac{1}{2}$ yards rubber blankets.....	20.31	
6 $\frac{1}{2}$ yards rubber blankets, at \$4.94.....	32.11	
18 pairs blankets, at \$4.58.....	82.44	
10 yards felt.....	87.12	
6 rolls tape, at \$6.....	36.00	
12 rolls tape, at 60 cents.....	7.20	
5 yards white cloth.....	43.56	
Rope.....	226.36	
Recutting hand tools.....	70.50	
Repairs to machinery.....	764.45	
Miscellaneous tools, implements, etc.....	856.86	
		\$35,765.18
Materials, etc.:		
Book printing-ink:		
1,256 pounds, at 50 cents.....	628.00	
4,755 pounds, at 25 cents.....	1,188.75	
		1,816.75
Job printing-ink:		
2,414 pounds, at 45 cents.....		1,086.30
Web press ink:		
2,342 pounds, at 15 cents.....		351.30

No. 6.—*Disbursements on account of the public printing and binding, etc.*—Continued.

Materials, etc.—Continued.

Colored ink:

1 pound, at \$8.....	\$8.00	
10 pounds, at \$5.....	50.00	
$\frac{1}{4}$ pound, at \$4	1.00	
210 pounds, at \$2.50	525.00	
192 pounds, at \$1.....	192.00	
25 pounds, at 50 cents	12.50	
		\$788.50

Cut ink:

200 pounds, at 65 cents.....	130.00	
1,000 pounds, at 50 cents	500.00	
		630.00

Printers' varnish:

25 pounds, at 25 cents.....		6.25
130,492 pounds stereotype metal, at 6.2 cents.....		8,090.51
5,149 pounds copper battery plates, at 17 cents.....		875.33
5,030 pounds tin and antimony, at $16\frac{4}{10}$ cents.....		827.43
2,110 pounds tin-foil, at 18.5 cents		390.35
5,000 pounds iron filings, at 3.5		175.00
6 molds		1.00

Stereotype backing-paper:

5 reams, at \$9.....	45.00	
12 reams, at \$7.....	84.00	
6 reams, at \$5.60	33.60	
		162.60
72,276 pounds bar lead, at 4 cents.....		2,891.04
2,300 pounds bar tin, at 20.9 cents.....		480.70

Glue:

250 pounds, at 32 cents.....	80.00	
145 pounds, at 27 cents	39.15	
157 pounds, at 25 cents	39.25	
226 pounds, at 14.5 cents	32.79	
1,000 pounds, at 11.7 cents	117.00	
21,000 pounds, at 11.1 cents.....	2,331.00	
		2,639.19
4,810 pounds potash, at 5.1 cents		245.29

Roller composition:

316 pounds, at 50 cents	158.00	
30 pounds, at 35 cents	10.50	
150 pounds, at 32 cents	48.00	
5,208 pounds, at 30 cents	1,562.40	
		1,778.90

Glycerine:

960 pounds, at 17.5 cents	168.00	
506 pounds, at 16 cents.....	80.96	
		248.96

Benzine:

157 gallons, at 7.4 cents	11.63	
4,144 gallons, at 7.3 cents.....	302.33	
		313.96

Lubricating oil:

10 gallons, at 90 cents	9.00	
260 $\frac{1}{2}$ gallons, at 65 cents	169.34	
1,184 $\frac{1}{2}$ gallons, at 60 cents	711.00	
52 $\frac{1}{2}$ gallons, at 58.5 cents	30.42	
617 $\frac{4}{10}$ gallons, at 45 cents.....	277.83	
28 gallons, at 50 cents.....	14.00	
10 gallons, at 40 cents.....	4.00	
150 pounds, at 16.3 cents	24.45	
		1,240.04

Cotton:

403 yards, at 22.8 cents.....	91.87	
150 yards, at $13\frac{9}{10}$ cents.....	204.30	
1,573 $\frac{1}{2}$ yards, at 9 cents.....	141.62	
1,888 $\frac{1}{2}$ yards, at 5.7 cents.....	107.64	
945 $\frac{1}{2}$ yards, at 5.3 cents.....	50.11	
1,869 yards, at 4.7 cents	87.83	
		683.37

No. 6.—*Disbursements on account of the public printing and binding, &c.*—Continued.

Materials, &c.—Continued.

Canvas:

2, 170 yards, at 25.7 cents	\$557.70	
472½ yards, at 15.5.....	73.24	
		\$630.94

Thread:

300 dozen spools, at \$1.50.....	450.00	
1, 100½ pounds, at \$1.10	1, 210.55	
100 pounds, at \$1.01	101.00	
101 pounds, at 84 cents	84.84	
96 pounds, at 81 cents.....	77.76	
385 pounds, at 78 cents.....	300.30	
101 pounds, at 74.5 cents	75.25	
1, 111 pounds, at 72 cents.....	799.92	
96 pounds, at 71 cents.....	68.16	
100 pounds, at 66 cents.....	66.00	
		3, 233.78

Twine:

50 pounds, at 31 cents.....	15.50	
4, 321½ pounds, at 29 cents.....	1, 253.23	
51 pounds, at 24 cents.....	12.24	
2, 572 pounds, at 12.5 cents.....	321.49	
9, 296 pounds, at 10 cents.....	926.90	
		2, 529.36

Flour:

120 barrels, at \$4.42.....	530.40
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Alcohol:

48½ gallons, at \$2.22	107.67
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Wood alcohol:

140 gallons, at \$1.03	144.20
------------------------------	--------

Coal

1, 300 pounds plumbago, at 30.6 cents.....	397.80
160 pounds stereotype backing-powder, at 15 cents	24.00

Imitation Russian leather:

3, 116½ feet, at 14 cents	436.27	
5, 000 feet, at 15 cents.....	750.00	
35, 042 feet, at 13 cents	4, 555.46	
		5, 741.73

Law sheep:

3, 400½ dozen, at \$8.50	28, 904.25	
½ dozen, at \$7	3.50	
		28, 907.75

Cowhide buffing:

6, 195¾ feet, at 7 cents.....	433.72	
121 feet, at 5 cents.....	6.04	
		439.76

Turkey morocco:

16 dozen, at \$16.90	270.40	
325½ dozen, at \$16.40.....	5, 338.20	
		5, 608.60

Title leather:

20 dozen, at \$8.50.....	170.00	
92 dozen, at \$8.25.....	759.00	
20 dozen, at \$8.....	160.00	
80 dozen, at \$7.50.....	600.00	
		1, 689.00

Roans:

40 dozen, at \$9.....	364.50	
½ dozen, at \$8.....	4.00	
½ dozen, at \$7.75.....	3.87	
10½ dozen, at \$7.50.....	78.75	
110½ dozen, at \$6.95.....	767.97	
20 dozen, at \$6.37½.....	127.50	
		1, 346.59

No. 6.—*Disbursements on account of the public printing and binding, etc.*—Continued.

Materials, etc.—Continued.

Skivers :

10 dozen, at \$7.50.....	\$75.00	
312 dozen, at \$7.40.....	2,308.80	
100½ dozen, at \$4.25.....	427.12	
		\$2,810.92

Parchment:

20½ dozen, at \$9.....		184.50
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Parchment substitute :

10 pieces, at 70 cents.....	7.00	
70 pieces, at 62 cents.....	43.40	
		50.40

1 piece virgin.....		.75
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30 pieces web, at \$1.10.....		33.00
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500½ dozen fleshers, at \$3.50.....		1,751.75
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50 dozen buffed fleshers, at \$3.50.....		175.00
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Gold leaf:

50 packs, at \$6.75.....	337.50	
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1,700 packs, at \$6.43.....	10,931.00	
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700 packs, at \$5.60.....	3,920.00	
		15,188.50

Imitation gold leaf:

1,000 packs, at \$1.18.....		1,180.00
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Book cloth :

50 pieces, at \$6.35.....	317.50	
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445 pieces, at \$6.22.....	2,767.90	
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50 pieces, at \$5.99.....	299.50	
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699 pieces, at \$5.85.....	4,089.15	
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2,100 pieces, at \$4.25.....	8,925.00	
		16,399.05

Gray super:

6,000 yards, at 3.2 cents.....		192.00
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Crash :

300 yards, at 10 cents.....	30.00	
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1,199½ yards, at 9.6 cents.....	115.15	
		145.15

Headbands :

80 pieces, at \$1.10.....	88.00	
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1 piece.....	.95	
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1 piece.....	.78	
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61 pieces, at 70 cents.....	42.70	
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122 pieces, at 62 cents.....	75.64	
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121 pieces, at 53 cents.....	64.13	
------------------------------	-------	--

401 pieces, at 49 cents.....	196.49	
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181 pieces, at 32 cents.....	57.92	
		526.61

Binders' boards :

1,000 pounds, at 5.9 cents.....	59.00	
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400,000 pounds, at 4.7 cents.....	18,800.00	
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31,850 pounds, at 3.2 cents.....	1,019.20	
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232,293 pounds, at 2.3 cents.....	5,342.74	
		25,220.94

Strawboard :

25,000 pounds, at 2.5 cents.....		625.00
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Cap ledger paper :

550 reams, 19 pounds, at \$2.831.....	1,557.05	
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525½ reams, 19 pounds, at \$2.071.....	1,084.69	
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200 reams, 16 pounds, at \$2.384.....	476.80	
		3,118.54

Double-cap ledger paper :

215 reams 48-pound, at \$6.864.....	1,475.75	
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52½ reams 42-pound, at \$6.30.....	333.27	
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502 reams 42-pound, at \$6.006.....	3,015.01	
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432 reams 38-pound, at \$5.434.....	2,347.48	
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No. 6.—Disbursements on account of the public printing and binding, etc.—Continued.

Materials, etc.—Continued.

Double-cap ledger paper—Continued.

1,291 $\frac{337}{1000}$ reams 38-pound, at \$4.142.....	\$5,350.10	
207 $\frac{474}{1000}$ reams 36-pound, at \$3.924	815.99	
179 reams 28-pound, at \$4.004	716.70	
5 reams, at \$5.90	29.50	
		\$14,083.80

Demy ledger paper:

32 reams 38-pound, at \$4.142	132.54	
650 reams 29-pound, at \$4.321	2,808.65	
202 reams 29-pound, at \$4.292	866.98	
743 reams 29-pound, at \$3.161	2,348.62	
400 reams 24-pound, at \$3.576	1,430.40	
20 reams 24-pound, at \$3.552	71.04	
538 reams 24-pound, at \$2.616	1,409.23	
		9,067.46

Double demy ledger paper:

300 reams 75-pound, at \$14.25	4,275.00	
332 $\frac{330}{1000}$ reams 58-pound, at \$6.728	2,238.13	
422 $\frac{330}{1000}$ reams 58-pound, at \$6.38	2,695.37	
485 $\frac{480}{1000}$ reams 48-pound, at \$5.28	2,566.05	
300 reams 29-pound, at \$4.321.....	1,296.30	
		13,070.85

Medium ledger paper:

15 reams at \$5.90.....	88.50	
96 $\frac{13}{1000}$ reams, 38-pound, at \$5.776.....	558.24	
1,309 $\frac{328}{1000}$ reams, 38-pound, at \$5.434	7,116.65	
846 $\frac{434}{1000}$ reams, 38-pound, at \$4.142.....	3,507.70	
107 $\frac{1}{1000}$ reams, 30-pound, at \$4.56	490.20	
403 $\frac{50}{1000}$ reams, 30-pound, at \$4.29.....	1,731.88	
		13,493.17

Royal ledger paper:

100 reams, 46-pound, at \$7.038.....	703.80	
428 reams, 46-pound, at \$6.578	2,815.38	
208 reams, 35-pound, at \$5.355.....	1,113.84	
304 reams, 35-pound, at \$5.005	1,521.51	
		6,154.53

Super-royal ledger paper:

458 reams, 57-pound, at \$11.40	5,221.20	
51 reams, 57-pound, at \$8.778	447.68	
196 reams, 35-pound, at \$5.005	979.08	
		6,647.96

Imperial ledger paper:

158 reams, 75-pound, at \$15.00		2,370.00
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Ledger special:

54 $\frac{370}{1000}$ reams, 100-pound, at \$20.00.....	1,095.04	
107 reams, 65-pound, at \$7.15	765.05	
46 $\frac{314}{1000}$ reams, 50-pound, at \$10.00	466.28	
230 reams, 32-pound, at \$3.712	853.76	
136 $\frac{405}{1000}$ reams, 30-pound, at \$3.48	475.82	
316 $\frac{387}{1000}$ reams, 30-pound, at \$3.30	1,044.69	
20 $\frac{53}{1000}$ reams, 23-pound, at \$4.60	93.40	
		4,794.04

Manilla paper:

136 $\frac{14}{1000}$ reams, 140-pound, at \$10.50	1,435.35	
217 $\frac{400}{1000}$ reams, 100-pound, at \$8.52	1,855.00	
105 reams, 100-pound, at \$7.50	787.50	
51 reams, 50-pound, at \$4.27	220.53	
634 $\frac{180}{1000}$ reams, 50-pound, at \$3.75	2,378.85	
348 pounds at 6.5 cents.....	22.62	
		6,700.51

Printing paper:

20 reams, at \$1.50		30.00
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Marble paper:

40 reams, at \$5.90		236.00
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No. 6.—*Disbursements on account of the public printing and binding, etc.*—Continued.

Materials, etc.—Continued.

Comb paper:

36 reams, at \$9.75	\$351.00	
10 reams, at \$8.80	88.00	
		\$439.00

Plaid paper.

20 $\frac{2}{3}$ reams, at \$7.50	153.06	
23 $\frac{1}{3}$ reams, at \$6.50	150.83	
		303.89

French folio:

20 reams, at 80 cents		16.00
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Tissue paper:

10 reams, at \$2.30	23.00	
30 reams, at \$1.80	54.00	
1,000 reams, at \$1.79	1,790.00	
		1,867.00

Blotting paper:

8 reams, at \$9.00		72.00
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Dyes, gums, etc.:

Red lake, 87 pounds, at 31.9 cents	27.75	
Red lake, 10 pounds, at 55 cents	5.50	
Soluble blue, 40 pounds, at 56 cents	22.40	
Chinese blue, 1 pound	.80	
Carmine, 50 ounces, at 29.5 cents	14.75	
Vermilion, 3 $\frac{1}{2}$ pounds, at 90 cents	3.15	
Vermilion, 1 pound	1.25	
English red, 2 pounds, at 90 cents	1.80	
Cochineal, 50 pounds, at 55 cents	27.50	
Dextrine, 714 pounds, at 7 cents	49.98	
Gum hog, 248 pounds, at 43 cents	106.64	
Eosine, 10 pounds, at \$2.50	25.00	
Pulverized alum, 500 pounds, at 3 cents	15.00	
Gum arabic, 125 pounds, at 83 cents	103.75	
Balsam fir, 4 pounds, at 60 cents	2.40	
Orange shellac, 100 pounds, at 24 cents	24.00	
French varnish, 2 dozen bottles	28.00	
Dissolvent, 102 gallons, at 25 cents	25.50	
Creosote, 40 pounds, at 50 cents	20.00	
Disinfectant, 1 barrel	12.50	
Disinfectant powders	35.00	
Carbolic acid, $\frac{1}{2}$ gallon	2.00	
Borax, 125 pounds, at 10 cents	12.50	
Pearlash, 200 pounds, at 8 cents	16.00	
Sulphate of copper, 5,163 pounds, at 6.5 cents	335.58	
Blue vitriol, 1,022 pounds, at 6.5 cents	66.43	
Ammonia, 88 pounds, at 10 cents	8.80	
Beef galls, 146 at 25 cents	36.50	
Egg albumen, 350 pounds, at 73 cents	255.50	
Blood albumen, 100 pounds, at 21.5 cents	21.50	
		1,307.48

Gas:

9,381,300 cubic feet, at \$1.25 per 1,000	11,726.62	
Freight, cartage, boxing, etc	975.50	

Stable supplies:

Wagons and repairs	1,026.45	
Harness and repairs	240.80	
Shoeing	373.00	
Feed	1,467.68	
Veterinary services and medicines	76.85	
4 horses	655.00	
Hire of horse	130.00	
Combs, brushes, etc.	140.85	
		4,110.63

No. 6.—*Disbursements on account of the public printing and binding, etc.*—Continued.

Miscellaneous:	
Potter's clay, 20 barrels, at \$1.55	\$31.00
Tablet composition, 900 pounds, at 22 cents	198.00
Emery cloth, 50 quires, at 48 cents	24.00
Blocking boards:	
1, 787 $\frac{7}{12}$ feet, at 15 cents	\$268.14
490 feet, at 10 cents	49.00
	317.14
Press boards, 194 sheets	28.00
Guards for Philadelphia patent backs, 38,000, at 5 cents	1,900.00
Cotton waste, 7,854 pounds, at 8.8 cents	691.12
Bonnet boards, 11,088 sheets, at 3 cents	332.64
Plaster of Paris, 31 barrels, at \$1.69	52.39
Beeswax, 1,095 pounds, at 30 cents	328.50
Telephone rent	657.71
Changing switchboard	32.00
Telegraphing	12.38
Stationery	715.46
Page cord:	
100 pounds, at 20.5 cents	20.50
500 pounds, at 20.4 cents	102.00
	122.50
Stitching-machine wire:	
400 pounds, at 18 cents	72.00
900 pounds, at 15 cents	135.00
296 dozen spools, at \$1.50	444.00
	651.00
Canvas, 475 pounds, at 15 cents	71.25
Tracing linen, 288 yards, at 22 cents	63.36
Enameled ducking, 110 yards, at 35 cents	38.50
Tape:	
10 rolls, at \$1.25	12.50
322 gross, at 31.5 cents	101.42
500 yards, at 2 cents	10.00
	123.92
Kaolin, 6,000 pounds, at 1.7 cents	102.00
Zinc, 387 $\frac{1}{2}$ pounds	33.45
Wire, 103 pounds	11.80
Finisher's rubbers, 274	137.00
Crude rubber, 23 $\frac{1}{4}$ pounds, at \$1.25	29.06
Virgin rubber, 14 $\frac{3}{4}$ pounds, at \$1.25	18.44
Oil:	
3 gallons, at 90 cents	2.70
15 gallons, at 25 cents	3.75
15 gallons, at 20 cents	3.00
Sweet oil, 70 dozen bottles, at 60 cents	42.00
Olive oil, 30 quarts, at 59 cents	17.70
Oil of cloves, 2 pounds, at \$2.00	4.00
	73.15
Ice	1,414.16
Hose and nozzles	32.25
Sponges:	
130 pounds, at \$2.15	279.50
30 pounds, at \$1.70	51.00
	330.50
Sand-paper, 215 yards	73.50
Brooms:	
8 dozen, at \$2.90	23.20
29 dozen, at \$2.40	69.60
25	6.04
	98.84
Soap, 9,000 pounds, at 4.5 cents	405.00
Castile soap:	
25 pounds, at 18 cents	4.50
20 pounds, at 12 cents	2.40
	6.90

No. 6.—*Disbursements on account of the public printing and binding, etc.*—Continued.

Miscellaneous—Continued:

Wax tapers, 33 dozen boxes, at \$1.....	\$33.00
Laundering towels	279.89
Perforating labels	288.95
Buckets	10.15
Sawdust	95.04
Eggs	41.79
Chairs, stools, etc	307.50
Miscellaneous	908.61
	2,310,008.42
Value of bindery stock on hand, exclusive of machinery and tools, June 30, 1889.....	49,053.51
Value of bindery stock on hand, exclusive of machinery and tools, June 30, 1890.....	50,127.72

No. 7.—*Statement showing disbursements on account of paper for public printing (except Congressional Record) for the fiscal year ended June 30, 1890.*

M. F. printing paper:

5,010 reams, 24 by 38 inches, 48-pound, at \$2.448	\$12,264.50
4,400 reams, 24 by 38 inches, 48-pound, at \$2.40	10,560.00
2,601 reams, 24 by 38 inches, 48-pound, at \$2.352	6,117.55
501 reams, 24 by 38 inches, 48-pound, at \$2.256	1,130.26
4,951 reams, 24 by 38 inches, 48-pound, at \$2.064	10,218.84
25,622 pounds, 24 by 38 inches, 48-pound, at 5.2 cents	1,332.35
99,854 pounds, 24 by 38 inches, 48-pound, at 4.3 cents	3,949.72
	\$45,573.22

M. F. printing paper:

43,840 pounds, 24 by 38 inches, 45-pound, at 5.1 cents.....	2,235.83
216,913 pounds, 24 by 38 inches, 45-pound, at 5.3 cents.....	11,496.39
2,529 pounds, 24 by 38 inches, 45-pound, at 4.3 cents.....	113.05
	13,845.27

M. F. printing paper:

13,491 reams, 38 by 48 inches, 96-pound, at \$4.704	63,461.65
3,498 reams, 38 by 48 inches, 96-pound, at \$4.128	14,439.73
	77,901.38

M. F. printing paper:

746 reams, 29 by 41 inches, 125-pound, at \$6.75	5,035.50
115 reams, 20½ by 29 inches, 163-pound, at \$2.709.....	311.54
	5,347.04

S. & S. C. printing paper:

2,920 reams, 24 by 32 inches, 45-pound, at \$2.61	7,621.20
1,769 reams, 24 by 32 inches, 45-pound, at \$2.385	4,219.08
	11,840.28

S. & S. C. printing paper:

299 reams, 32 by 48 inches, 90-pound, at \$5.22	1,560.78
1,150 reams, 32 by 48 inches, 90-pound, at \$4.86	5,589.00
	7,149.78

S. & S. C. printing paper:

1,107 reams, 24 by 38 inches, 70-pound, at \$3.99	4,416.93
400 reams, 24 by 38 inches, 70-pound, at \$3.78	1,512.00
	5,928.93

S. & S. C. printing paper:

3,930 reams, 24 by 32 inches, 60-pound, at \$3.42	13,440.60
997½ reams, 24 by 32 inches, 60-pound, at \$3.24	3,232.87
	16,673.47

S. & S. C. printing paper:

1,071½ reams, 21½ by 29 inches, 40-pound, at \$2.32	2,486.11
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S. & S. C. printing paper:

978¾ reams, 38 by 48 inches, 100-pound, at \$5.80	5,675.01
361 reams, 38 by 48 inches, 100-pound, at \$5.40.....	1,949.40
	7,624.41

S. & S. C. printing paper:

582¾ reams, 38 by 48 inches, 120-pound, at \$6.96	4,051.76
397 reams, 38 by 48 inches, 120-pound, at \$6.48	2,572.56
	6,624.32

No. 7.—*Disbursements on account of paper for public printing, etc.*—Continued.

Miscellaneous—Continued :			
S. & S. C. printing paper :			
1,115½ reams, 22¾ by 31¼ inches, 50-pound, at \$2.90.....	\$3,234.95		
500 reams, 22¾ by 31¼ inches, 50-pound, at \$2.70.....	1,350.00		
			\$4,584.95
S. & S. C. printing paper :			
860½ reams, 22¾ by 31¼ inches, 42-pound, at \$2.436.....	2,097.03		
299 reams, 22¾ by 31¼ inches, 42-pound, at \$2.268.....	678.13		
			2,775.16
S. & S. C. printing paper :			
1,380 reams, 22¾ by 31¼ inches, 40-pound, at \$2.32.....	3,201.60		
400 reams, 22¾ by 31¼ inches, 40-pound, at \$2.16.....	864.00		
			4,065.60
Artificial parchment :			
15,358 pounds, at 17.7 cents.....	2,718.37		
1,435 pounds, at 16.5 cents.....	236.77		
			2,955.14
Parchment deed, 816 pounds, at 16.5 cents.....			134.64
Thin bristol :			
166,845 sheets, at 2.2 cents.....	3,670.59		
25,000 sheets, at 2 cents.....	500.00		
			4,170.59
Thick bristol :			
144,645 sheets, at 2.7 cents.....	3,905.41		
90,000 sheets, at 2.4 cents.....	2,160.00		
			6,065.41
China board, 5,161 sheets, at 3 cents.....			154.83
Colored card board :			
9,717 sheets, at 3 cents.....	291.51		
3,470 sheets, at 2.8 cents.....	97.16		
			388.67
Pearl-gray bristol, 442,175 sheets, at 1.7 cents.....			7,516.95
Cream bristol, 70 sheets.....			6.62
Melon bristol, 418,937 sheets, at 1.8 cents.....			7,540.87
Yellow bristol :			
369,866 sheets, at 1.7 cents.....	6,287.72		
71,250 sheets, at 1.5 cents.....	1,068.75		
			7,356.47
Green bristol, 314,261 sheets, at 1.7 cents.....			5,342.43
White quarto :			
787 reams, 12 pounds, at 98.4 cents.....	774.42		
659 reams, 10 pounds, at 82 cents.....	540.38		
363½ reams, 10 pounds, at 74 cents.....	268.92		
			1,583.72
White cap :			
612 reams, 16 pounds, at \$1.312.....			802.94
White double cap :			
1,437½ reams, 28 pounds, at \$2.296.....	3,299.46		
442 reams, 28 pounds, at \$2.072.....	915.82		
1,014½ reams, 36 pounds, at \$2.952.....	2,993.47		
781½ reams, 36 pounds, at \$2.664.....	2,082.97		
2,978½ reams, 32 pounds, at \$2.624.....	7,815.71		
2,104½ reams, 32 pounds, at \$2.368.....	4,982.72		
			22,090.15
Colored double cap :			
945½ reams, 32 pounds, at \$2.368.....	2,238.94		
233½ reams, 32 pounds, at \$2.24.....	522.59		
			2,761.53
White demy :			
1,098½ reams, 25 pounds, at \$2.05.....	2,251.81		
313½ reams, 25 pounds, at \$1.85.....	579.51		
1,085½ reams, 20 pounds, at \$1.64.....	1,780.55		
621½ reams, 20 pounds, at \$1.48.....	919.45		
			5,531.32
American linen demy :			
50 reams, 16 pounds, at \$3.38.....			169.00
Colored demy :			
122½ reams, 20 pounds, at \$1.78.....	217.87		
380½ reams, 20 pounds, at \$1.62.....	615.84		
			833.71

No. 7.—*Disbursements on account of paper for public printing, etc.*—Continued.

Miscellaneous—Continued.

White double demy:

1,054 $\frac{1}{2}$ reams, 50 pounds, at \$4.10	\$4,324.26	
207 $\frac{1}{2}$ reams, 50 pounds, at \$3.70	767.93	
1,989 $\frac{1}{2}$ reams, 40 pounds, at \$3.28	6,526.05	
1,116 $\frac{1}{2}$ reams, 40 pounds, at \$2.96	3,305.13	
534 $\frac{3}{8}$ reams, 34 pounds, at \$2.788	1,489.07	
338 $\frac{2}{5}$ reams, 34 pounds, at \$2.516	851.54	
		\$17,263.98

White folio:

189 reams, 23 pounds, at \$1.886	356.45	
170 reams, 23 pounds, at \$1.702	290.28	
352 reams, 16 pounds, at \$1.312	461.83	
110 $\frac{1}{2}$ reams, 16 pounds at \$1.184	131.00	
		1,239.56

White double folio:

87 $\frac{1}{2}$ reams, 40 pounds, at \$4.07	356.12	
2,138 $\frac{1}{2}$ reams, 40 pounds, at \$3.28	7,014.60	
1,915 $\frac{2}{5}$ reams, 40 pounds, at \$2.96	5,669.73	
		13,040.45

White medium:

40 reams, 26 pounds, at \$3.131	85.28	
1,537 $\frac{1}{2}$ reams, 26 pounds, at \$2.132	3,278.06	
540 $\frac{2}{5}$ reams, 26 pounds, at \$1.924	1,039.83	
196 reams, 20 pounds, at \$1.48	290.08	
		4,693.25

Blue medium:

149 reams, 26 pounds, at \$2.314		344.78
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White royal:

1,372 $\frac{2}{5}$ reams, 28 pounds, at \$2.296	3,151.13	
323 $\frac{1}{2}$ reams, 28 pounds, at \$2.072	670.51	
		3,821.64

White super royal:

437 $\frac{1}{2}$ reams, 35 pounds, at \$2.87	1,256.35	
219 reams, 35 pounds, at \$2.59	567.21	
		1,823.56

White imperial:

1,310 $\frac{1}{2}$ reams, 40 pounds, at \$3.28	4,298.45	
336 $\frac{1}{2}$ reams, 40 pounds, at \$2.96	996.63	
		5,295.08

White writing paper:

1,027 $\frac{4}{5}$ reams, 64 pounds, at \$4.736	4,865.28	
2,504 $\frac{1}{2}$ reams, 52 pounds, at \$4.264	10,679.62	
554 $\frac{1}{2}$ reams, 52 pounds, at \$3.848	2,134.87	
639 $\frac{4}{5}$ reams, 50 pounds, at \$4.10	2,621.13	
219 $\frac{1}{2}$ reams, 50 pounds, at \$3.70	812.33	
99 $\frac{4}{5}$ reams, 46 pounds, at \$3.404	337.68	
2,097 $\frac{1}{2}$ reams, 35 pounds, at \$2.87	6,020.69	
980 $\frac{1}{2}$ reams, 35 pounds, at \$2.59	2,539.63	
199 reams, 32 pounds, at \$2.624	522.18	
244 $\frac{1}{2}$ reams, 32 pounds, at \$2.368	579.09	
		31,112.50

Cover paper:

239 $\frac{7}{10}$ reams, 50 pounds, at \$3.20	765.89	
101 $\frac{1}{2}$ reams, 50 pounds, at \$3.00	305.70	
73 $\frac{1}{2}$ reams, 50 pounds, at \$2.95	217.53	
559 $\frac{1}{2}$ reams, 36 pounds, at \$2.304	1,289.27	
227 $\frac{4}{5}$ reams, 36 pounds, at \$2.124	482.67	
		3,061.06

Plate paper:

16,287 pounds, at 9.9 cents	1,612.40	
1,225 pounds, at 9.8 cents	120.04	
		1,732.44

Map paper:

135,604 pounds, at 17 cents		23,052.68
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Fine coated wood-cut paper:

78,297 pounds, at 10.2 cents	7,986.29	
15,236 pounds, at 9.4 cents	1,431.18	
		9,418.47

No. 7.—*Disbursements on account of paper for public printing, etc.*—Continued.

Miscellaneous—Continued.		
Double-coated, chromo-lithographic paper:		
211 pounds, at 8.7 cents		\$18.36
Manilla paper:		
207 reams, at \$1.80	\$372.60	
14,566 pounds, at 6 cents	873.96	
		1,246.56
Bullet patch:		
5,000 sheets, at \$14 per 1,000		70.00
Glazed bond:		
4,160 pounds, at 21 cents	873.60	
59,820 pounds, at 16.4 cents	9,810.45	
		10,684.05
		415,743.33

Inventory showing the quantity of paper on hand June 30, 1890.

3,366 $\frac{1}{2}$ reams machine-finish printing paper, costing	\$9,030.30
3,064 $\frac{1}{2}$ reams S. and S. C. white and colored printing paper, costing	12,957.68
10,180 $\frac{1}{2}$ reams white and colored writing paper, costing	25,134.70
611 $\frac{1}{2}$ reams cover paper, costing	1,542.98
602 $\frac{7}{8}$ reams wood-cut paper, costing	4,066.54
80 $\frac{1}{2}$ reams map paper, costing	531.22
392 $\frac{1}{2}$ reams manilla paper, costing	825.05
305 $\frac{1}{2}$ reams tissue paper, costing	207.84
32 $\frac{8}{9}$ reams golden envelope paper, costing	63.76
263,815 sheets bond paper, costing	2,948.08
74,457 sheets artificial parchment, costing	1,081.41
17,453 sheets parchment deed, costing	210.18
17,064 sheets white and colored cardboard, costing	478.38
2,078 sheets R. R. board, costing	72.73
162,379 sheets white and colored bristol board, costing	2,647.89
Total	61,798.74

No. 8.—*Statement showing the disbursements on account of the Congressional Record for the fiscal year ended June 30, 1890.*

Wages of employes	\$72,299.34
Materials, etc.:	
Brass rule	83.85
Type	1,014.33
20 pairs wooden cheeks	20.00
10 $\frac{1}{2}$ pounds cutting cylinder rubbers, at \$1.25	13.44
3 4-inch circular slitters, at \$2	6.00
16 steel tucker-blades	13.91
2 curved casting molds, at \$182	324.00
3 mailing-machine belts, at 25 cents	.75
11 $\frac{1}{2}$ yards rubber blankets, at \$7.22	80.23
Canvas	6.00
20 cutting cylinder knives, at \$1.85	37.00
6 patent lined job-galleys	7.80
6 pairs blankets, at \$4.58	27.48
10 pairs cases	15.75
5 double stands, at \$4.05	20.25
4 cutting cylinder rubbers	8.09
Sharpening five mailing-machine blades, at 50 cents	2.50
17 arm chairs, at \$3	51.00
1 wagon for Record messenger	125.00
Repairing wagons	12.25
Horse feed	70.32
240 street-car tickets	10.00
1 mail-bag	7.50
125 pounds cotton wrapping cord, at 18 cents	22.50

No. 8.—*Disbursements on account of the Congressional Record, etc.*—Continued.

Materials, etc.—Continued.

Bartlett's Familiar Quotations		\$3.00
1 clock		5.50
1 barrel		.35
3,515 pounds web-press ink, at 15 cents		527.25
Indexing Congressional Record		6,193.80
Telephone rent		50.00
569,300 feet gas, at \$1.25 per 1,000 feet		711.64
1,020 pounds roller composition, at 30 cents		306.00
50 gallons engine-oil, at 60 cents		30.00
3,500 pounds ice, at 36 cents per 100 pounds		12.60
100 24-candle-power lamps, at 85 cents		85.00
Wiring five lights		42.50
Changing and adding new lights		1,330.00
300 tons coal, at \$2.93		879.00
200 pounds wire, at 15 cents	\$30.00	
200 pounds wire, at 18 cents	36.00	
		66.00
11,011 pounds stereotype metal, at 6.2 cents		682.68
5,000 feet imitation Russia leather, at 13 cents		650.00
750 yards crash, at 10 cents		75.00
53 gallons benzine, at 7.3 cents		3.86
500 yards cotton, at 13 $\frac{1}{2}$ cents		68.10
Boxing, expressage, cartage, etc.		9.65
14 reams German wave double cap marble paper, at \$5.95		83.30
41 $\frac{1}{2}$ reams golden envelope paper, at \$2.184		90.42
50 reams tissue paper, at \$1.80	90.00	
35 reams tissue paper, at \$2.30	80.50	
		170.50
6 reams stereotype backing paper, at \$5.60	33.60	
14 reams stereotype backing paper, at \$7	98.00	
		131.60
8,000 pounds binders' boards, at 2.3 cents		184.00
189,500 pounds M. F. printing paper, 24 by 38 inches, 48-pound, at 4.1 cents	7,769.50	
146,146 pounds M. F. printing paper, 24 by 38 inches, 48-pound, at 5.2 cents	7,599.59	
88,338 pounds M. F. printing paper, 24 by 38 inches, 48-pound, at 5.3 cents	4,681.92	
		20,051.01
		106,722.05

No. 9.—*Statement showing the disbursements on account of lithographing and engraving (except Congressional Record) during the fiscal year ended June 30, 1890.*

100 copies of 1 illustration for Report of Entomologist, Department of Agriculture, for 1888	\$10.00
250 copies of 4 illustrations for Report of Entomologist, Department of Agriculture, for 1888	40.00
1,734 copies of 16 illustrations for Report of Commissioner of the Department of Agriculture for 1888	61.90
5,050 copies of 21 illustrations for Bulletin No. 20, for the Division of Entomology, Department of Agriculture	940.00
1,784 copies of 25 illustrations for Fourth and Fifth Annual Report of Bureau of Animal Industry	92.67
550 copies of 2 illustrations for Subdivision 22 of the Atlantic Local Coast Pilot	40.00
1,550 copies of 14 illustrations for Atlantic Coast Pilot, Part VI	150.00
1,075 copies of 172 illustrations for Pacific Coast Pilot	430.00
3,050 copies of 3 illustrations for Bulletin No. 11, U. S. Coast and Geodetic Survey	70.00
6,784 copies of 49 illustrations for U. S. Coast and Geodetic Survey Report for 1887	1,450.00
500 copies of 6 illustrations for Appendix 5, U. S. Coast and Geodetic Survey Report for 1887	27.50
300 copies of 2 illustrations for Appendix 6, U. S. Coast and Geodetic Survey Report for 1887	8.00
300 copies of 1 illustration for Appendix 7, U. S. Coast and Geodetic Survey Report for 1887	4.00

No. 9.—*Disbursements on account of lithographing and engraving, etc.*—Continued.

500 copies of 9 illustrations for Appendix 8, U. S. Coast and Geodetic Survey Report for 1887.....	\$145. 00
500 copies of 1 illustration for Appendix 14, U. S. Coast and Geodetic Survey Report for 1887.....	10. 00
75 copies of 12 illustrations for Annual List of Merchant Vessels of the United States for 1888.....	92. 00
4,950 copies of 12 illustrations for Annual List of Merchant Vessels of the United States for 1889.....	295. 00
250 copies of 5 illustrations for Instructions to Special River Observers.....	15. 00
650 copies of 2 illustrations for American Ephemeris and Nautical Almanac for 1890...	32. 50
1,550 copies of 2 illustrations for American Ephemeris and Nautical Almanac for 1893...	38. 00
1,675 copies of 10 illustrations for Report of A. B. Johnson on Light-House Dues.....	116. 00
1,500 copies of 10 illustrations for The Modern Light-House Service.....	60. 00
500 copies of 5 illustrations for Report on Trials of Running Lights, etc.....	115. 00
550 copies of 26 illustrations for International Signal Code.....	375. 00
500 copies of 15 illustrations for Eighth Annual Report of Directors of U. S. Geological Survey.....	240. 00
4,784 copies of 1 illustration for Bulletin 53, U. S. Geological Survey.....	239. 00
4,784 copies of 1 illustration for Bulletin 57, U. S. Geological Survey.....	147. 00
4,784 copies of 1 illustration for Bulletin 59, U. S. Geological Survey.....	130. 00
21,034 copies of 10 illustrations for Ninth Annual Report of the Director of the U. S. Geological Survey.....	1,967. 00
15,500 copies of 15 illustrations for Eighth Annual Report of the Director of the U. S. Geological Survey.....	3,890. 00
17,784 copies of 1 illustration for Report of Smithsonian Institution for 1887, Part II.....	483. 00
1,000 copies of 1 illustration for Extract from Report of Smithsonian Institution for 1887.....	128. 00
7,124 copies of 24 illustrations for Annual Report of the Secretary of the Navy for 1889..	139. 50
7,484 copies of 8 illustrations for Annual Report of the Bureau of Navigation for 1889....	134. 00
8,484 copies of 44 illustrations for Annual Report of Bureau of Steam Engineering for 1889	735. 00
7,484 copies of 17 illustrations for Annual Report of Navy Yard Commission for 1889....	613. 00
7,324 copies of 70 illustrations for Annual Report of Chief of Engineers for 1889.....	700. 00
7,549 copies of 129 illustrations for Annual Report of Chief of Engineers for 1889.....	1,588. 79
7,934 copies of 5 illustrations for Annual Report of Chief of Ordnance for 1889.....	400. 00
5,434 copies of 1 illustration for Annual Report of Chief Signal Officer for 1889.....	70. 00
7,934 copies of 3 illustrations for Annual Report of Chief Signal Officer for 1889, Part II..	120. 00
2,680 copies of 47 illustrations for General Information Series No. 8.....	265. 00
6,030 copies of 1 illustration for Internal Revenue Bulletin, Series 7, No. 9.....	80. 00
13,034 copies of 6 illustrations for Report of Commissioner of Fish and Fisheries for 1887..	225. 00
1,734 copies of 1 illustration for Committee on Merchant Marine and Fisheries.....	50. 00
7,484 copies of 6 illustrations for Report of Board of Visitors to United States Military Academy for 1889.....	260. 00
6,334 copies of 1 illustration for Annual Report of Quartermaster-General for 1889.....	20. 00
8,309 copies of 1 illustration for Finance Report for 1889.....	25. 00
1,025 copies of 1 illustration for Appendix B to Finance Report for 1889.....	5. 00
2,575 copies of 2 illustrations for Report of Supervising Surgeon-General of Marine Hospital Service for 1889.....	117. 00
4,784 copies of 3 illustrations for Astronomical and Meteorological Observations for 1885..	297. 00
50 copies of 3 illustrations for testimony before Senate Committee on Irrigation of Arid Lands.....	20. 00
50 copies of 3 illustrations for Investigation of Ballot Box Forgery case in Ohio.....	22. 00
500 copies of 4 illustrations for Report of Engineer's Department, District of Columbia for 1889.....	45. 00
2,074 copies of 8 illustrations for Report of Commissioners District of Columbia for 1889..	350. 00
2,500 copies of 3 illustrations for Report of Health Officer of District of Columbia for 1889..	130. 00
8,400 copies of 4 illustrations for Proceedings of International Marine Conference.....	40. 00
9,734 copies of 1 illustration for Report of the Board of Indian Commissioners for 1889..	330. 00
2,550 copies of 8 illustrations for Manual of Surveying Instructions.....	200. 00
2,000 copies of 4 illustrations for Report of Railroad Committee, International American Conference.....	200. 00
6,284 copies of 42 illustrations for Memoirs of the National Academy of Science for 1887..	240. 00
1,784 copies of 1 illustration for portrait of statue of Robert Fulton.....	34. 61
1,784 copies of 1 illustration for portrait of statue of Lewis Cass.....	34. 61
1,784 copies of 1 illustration for portrait of statue of J. P. G. Muhlenberg.....	34. 61
1,784 copies of 1 illustration for portrait of statue of Hon. E. W. Robertson.....	34. 61

No. 9.—*Disbursements on account of lithographing and engraving, etc.*—Continued.

1,784 copies of 1 illustration for portrait of statue of Jas. N. Burnes.....	\$34.61
50 copies of 2 illustrations for Centennial Exposition at Melbourne, Australia.....	55.00
300 copies of 1 illustration for Memoirs on the Solar and Lunar Spectrum.....	7.00
10,000 copies of 1 illustration for Rules of Practice of United States Patent Office.....	50.00
5,000 copies of 1 illustration for Congressional Directory, Fiftieth Congress.....	30.00
59,600 copies of 1 illustration for Congressional Directory, Fifty-first Congress.....	357.60
125 copies of 3 illustrations for Executive E.....	160.00
25 copies of 4 illustrations for Supreme Court Record No. 250.....	14.00
25 copies of 5 illustrations for Supreme Court Record No. 386.....	40.00
30 copies of 4 illustrations for Court of Claims case No. 32.....	50.00
50 copies of 6 illustrations for Court of Claims case No. 13376.....	12.00
100 copies of 1 illustration for Court of Claims case No. 15220.....	6.00
30 copies of 1 illustration for Court of Claims case No. 16310.....	18.00
1,784 copies of 1 illustration for Senate Ex. Doc. No. 6, first session Fifty-first Congress..	175.00
1,784 copies of 1 illustration for Senate Ex. Doc. No. 14, first session Fifty-first Congress.	15.00
1,784 copies of 2 illustrations for Senate Ex. Doc. No. 18, first session Fifty-first Congress.	50.00
1,784 copies of 2 illustrations for Senate Ex. Doc. No. 22, first session Fifty-first Congress.	35.00
1,784 copies of 2 illustrations for Senate Ex. Doc. No. 23, first session Fifty-first Congress.	20.00
1,984 copies of 1 illustration for Senate Ex. Doc. No. 40, first session Fifty-first Congress.	60.00
1,884 copies of 7 illustrations for Senate Ex. Doc. No. 43, first session Fifty-first Congress.	175.00
1,984 copies of 2 illustrations for Senate Ex. Doc. No. 47, first session Fifty-first Congress.	130.00
1,784 copies of 2 illustrations for Senate Ex. Doc. No. 51, first session Fifty-first Congress.	60.00
2,304 copies of 4 illustrations for Senate Ex. Doc. No. 53, first session Fifty-first Congress.	27.00
1,784 copies of 10 illustrations for Senate Ex. Doc. No. 56, first session Fifty-first Congress.	70.00
1,784 copies of 1 illustration for Senate Ex. Doc. No. 57, first session Fifty-first Congress..	28.00
1,984 copies of 2 illustrations for Senate Ex. Doc. No. 65, first session Fifty-first Congress.	92.50
2,784 copies of 1 illustration for Senate Ex. Doc. No. 70, first session Fifty-first Congress.	22.50
1,784 copies of 1 illustration for Senate Ex. Doc. No. 90, first session Fifty-first Congress.	15.00
1,984 copies of 3 illustrations for Senate Ex. Doc. No. 96, first session Fifty-first Congress.	100.00
1,784 copies of 2 illustrations for Senate Ex. Doc. No. 127, first session Fifty-first Congress.	35.00
2,034 copies of 9 illustrations for Senate Ex. Doc. No. 146, second session Fiftieth Congress.	585.00
1,934 copies of 26 illustrations for Senate Report No. 2682, Part 2, second session Fiftieth Congress.....	1,050.00
1,784 copies of 3 illustrations for Senate Report No. 928, first session Fifty-first Congress.	22.00
6,784 copies of 16 illustrations for Senate Mis. Doc. No. 92, second session Forty-ninth Congress.....	888.00
1,784 copies of 18 illustrations for Senate Mis. Doc. No. 107, first session Fifty-first Congress.	65.00
3,000 copies of 2 illustrations for House Mis. Doc. No. 599, first session Fiftieth Congress...	95.00
5,059 copies of 20 illustrations for House Mis. Doc. No. 134, second session Fiftieth Congress.	548.00
2,909 copies of 2 illustrations for House Mis. Doc. No. 72, first session Fifty-first Congress..	75.00
1,784 copies of 1 illustration for House Mis. Doc. No. 136, first session Fifty-first Congress..	20.00
1,784 copies of 4 illustrations for House Mis. Doc. No. 288, first session Fifty-first Congress.	25.00
1,984 copies of 1 illustration for House Ex. Doc. No. 21, first session Fifty-first Congress....	150.00
1,984 copies of 1 illustration for House Ex. Doc. No. 22, first session Fifty-first Congress....	70.00
1,984 copies of 1 illustration for House Ex. Doc. No. 23, first session Fifty-first Congress....	20.00
1,984 copies of 1 illustration for House Ex. Doc. No. 24, first session Fifty-first Congress....	32.00
1,984 copies of 1 illustration for House Ex. Doc. No. 25, first session Fifty-first Congress....	25.00
1,984 copies of 1 illustration for House Ex. Doc. No. 26, first session Fifty-first Congress....	34.00
1,734 copies of 1 illustration for House Ex. Doc. No. 27, first session Fifty-first Congress....	20.00
1,984 copies of 1 illustration for House Ex. Doc. No. 28, first session Fifty-first Congress....	30.00
1,984 copies of 1 illustration for House Ex. Doc. No. 29, first session Fifty-first Congress....	125.00
1,784 copies of 1 illustration for House Ex. Doc. No. 33, first session Fifty-first Congress....	20.00
1,984 copies of 1 illustration for House Ex. Doc. No. 34, first session Fifty-first Congress....	145.00
1,984 copies of 1 illustration for House Ex. Doc. No. 35, first session Fifty-first Congress....	30.00
1,984 copies of 10 illustrations for House Ex. Doc. No. 39, first session Fifty-first Congress..	240.00
1,984 copies of 1 illustration for House Ex. Doc. No. 40, first session Fifty-first Congress....	245.00
1,984 copies of 1 illustration for House Ex. Doc. No. 41, first session Fifty-first Congress....	12.00
1,734 copies of 1 illustration for House Ex. Doc. No. 42, first session Fifty-first Congress....	15.00
1,784 copies of 1 illustration for House Ex. Doc. No. 47, first session Fifty-first Congress....	15.00
1,984 copies of 1 illustration for House Ex. Doc. No. 49, first session Fifty-first Congress....	16.00
1,984 copies of 3 illustrations for House Ex. Doc. No. 51, first session Fifty-first Congress....	82.00
1,784 copies of 1 illustration for House Ex. Doc. No. 53, first session, Fifty-first Congress.	15.00
1,984 copies of 2 illustrations for House Ex. Doc. No. 57, first session, Fifty-first Congress.	35.00
1,984 copies of 2 illustrations for House Ex. Doc. No. 59, first session, Fifty-first Congress.	40.00

No. 9.—*Disbursements on account of lithographing and engraving, etc.*—Continued.

1,984 copies of 1 illustration for House Ex. Doc. No. 61, first session, Fifty-first Congress.	\$50.00
1,984 copies of 3 illustrations for House Ex. Doc. No. 62, first session, Fifty-first Congress.	50.00
1,984 copies of 1 illustration for House Ex. Doc. No. 63, first session, Fifty-first Congress.	22.00
1,984 copies of 11 illustrations for House Ex. Doc. No. 64, first session, Fifty-first Congress.	600.00
1,984 copies of 1 illustration for House Ex. Doc. No. 66, first session, Fifty-first Congress.	22.00
1,984 copies of 1 illustration for House Ex. Doc. No. 69, first session, Fifty-first Congress.	25.00
1,984 copies of 3 illustrations for House Ex. Doc. No. 75, first session, Fifty-first Congress.	60.00
1,984 copies of 1 illustration for House Ex. Doc. No. 78, first session, Fifty-first Congress.	22.00
1,984 copies of 1 illustration for House Ex. Doc. No. 88, first session, Fifty-first Congress.	35.00
1,784 copies of 1 illustration for House Ex. Doc. No. 96, first session, Fifty-first Congress.	28.00
1,784 copies of 2 illustrations for House Ex. Doc. No. 103, first session, Fifty-first Congress.	30.00
1,984 copies of 2 illustrations for House Ex. Doc. No. 105, first session, Fifty-first Congress.	80.00
1,984 copies of 14 illustrations for House Ex. Doc. No. 106, first session, Fifty-first Congress.	1,389.00
1,984 copies of 1 illustration for House Ex. Doc. No. 108, first session, Fifty-first Congress.	30.00
1,984 copies of 1 illustration for House Ex. Doc. No. 135, first session, Fifty-first Congress.	12.00
1,784 copies of 1 illustration for House Ex. Doc. No. 145, first session, Fifty-first Congress.	18.00
2,584 copies of 2 illustrations for House Ex. Doc. No. 148, first session, Fifty-first Congress.	53.00
1,784 copies of 2 illustrations for House Ex. Doc. No. 158, first session, Fifty-first Congress.	25.00
1,784 copies of 6 illustrations for House Ex. Doc. No. 195, first session, Fifty-first Congress.	95.00
2,184 copies of 11 illustrations for House Ex. Doc. No. 211, first session, Fifty-first Congress.	366.00
2,184 copies of 8 illustrations for House Ex. Doc. No. 213, first session, Fifty-first Congress.	330.00
4,168 copies of 18 illustrations for House Ex. Doc. No. 215, first session, Fifty-first Congress.	512.00
1,784 copies of 1 illustration for House Ex. Doc. No. 234, first session, Fifty-first Congress.	18.00
1,784 copies of 6 illustrations for House Ex. Doc. No. 239, first session, Fifty-first Congress.	65.00
1,984 copies of 1 illustration for House Ex. Doc. No. 251, first session, Fifty-first Congress.	15.00
2,109 copies of 3 illustrations for House Ex. Doc. No. 264, first session, Fifty-first Congress.	32.00
1,839 copies of 9 illustrations for House Ex. Doc. No. 273, first session, Fifty-first Congress.	380.00
200 copies of 1 illustration for House Ex. Doc. No. 273, first session, Fifty-first Congress.	78.00
1,984 copies of 4 illustrations for House Ex. Doc. No. 316, first session, Fifty-first Congress.	130.00
1,984 copies of 10 illustrations for House Ex. Doc. No. 369, first session, Fifty-first Congress.	80.00
1,784 copies of 1 illustration for House Ex. Doc. No. 376, first session, Fifty-first Congress.	25.00
1,784 copies of 2 illustrations for House Ex. Doc. No. 381, first session, Fifty-first Congress.	30.00
1,784 copies of 1 illustration for House Report No. 643, first session, Fifty-first Congress.	32.00
1,784 copies of 1 illustration for House Report No. 792, first session, Fifty-first Congress.	55.00
1,884 copies of 1 illustration for House Report No. 1025, first session, Fifty-first Congress.	11.00
225 copies of 1 illustration for House Report No. 1210, first session, Fifty-first Congress.	10.00
Engraving 3 illustrations for Contested Election Case of <i>Atkinson v. Pendleton</i> .	19.00
Engraving 1 illustration for Contested Election case of <i>Hill v. Catchings</i> .	3.00
Engraving 1 illustration for Contested Election Case of <i>Miller v. Elliott</i> .	3.50
Engraving 1 illustration for Contested Election Case of <i>Threet v. Clark</i> .	7.00
Engraving 5 illustrations for Contested Election Case of <i>Eaton v. Phelan</i> .	19.00
Engraving 3 illustrations for Contested Election Case of <i>Mudd v. Compton</i> .	4.00
Engraving 1 illustration for Contested Election Case of <i>Smith v. Jackson</i> .	2.75
Engraving 1 illustration for Contested Election Case of <i>McGinnis v. Alderson</i> .	20.00
Engraving 1 illustration for Bulletin No. 2, Division of Forestry, Department of Agriculture.	7.00
Engraving 2 illustrations for Bulletin No. 1, Silk Section, Department of Agriculture.	3.00
Engraving 1 illustration for Bulletin No. 26, Division of Chemistry, Department of Agriculture.	15.00
Engraving 1 illustration for Bulletin No. 24, Department of Agriculture.	7.50
Engraving 24 illustrations for General Topographic and Geologic Atlas of the United States.	12,950.00
Engraving 1 illustration for Bulletin No. 10, U. S. Coast and Geodetic Survey.	7.50
Engraving 1 illustration for Bulletin No. 15, U. S. Coast and Geodetic Survey.	8.00
Engraving 1 illustration for Bulletin No. 16, U. S. Coast and Geodetic Survey.	8.00
Engraving 2 illustrations for Appendix to Volume XI, Proceedings of National Museum.	4.00
Engraving 13 illustrations for Proceedings of National Museum for 1888.	52.00
Engraving 59 illustrations for Proceedings of National Museum for 1889.	130.50
Engraving 3 illustrations for Proceedings of National Museum for 1890.	4.50
Engraving 15 illustrations for Bulletin No. 37, National Museum.	67.50
Engraving 332 illustrations for Bulletin No. 38, National Museum.	740.00
Engraving 53 illustrations for Bulletin No. 54 of the U. S. Geological Survey.	146.50
Engraving 16 illustrations for Bulletin No. 55 of the U. S. Geological Survey.	20.00
Engraving 7 illustrations for Bulletin No. 56 of the U. S. Geological Survey.	28.00

No. 9.—*Disbursements on account of lithographing and engraving, etc.*—Continued.

Engraving 23 illustrations for Bulletin No. 57 of the U. S. Geological Survey.....	\$42. 50
Engraving 5 illustrations for Bulletin No. 59 of the U. S. Geological Survey.....	7. 50
Engraving 7 illustrations for Bulletin No. 60 of the U. S. Geological Survey.....	11. 00
Engraving 14 illustrations for Bulletin No. 61 of the U. S. Geological Survey.....	14. 00
Engraving 158 illustrations for the Ninth Annual Report of the U. S. Geological Survey.....	1, 455. 50
Engraving 59 illustrations for the Tenth Annual Report of the U. S. Geological Survey.....	77. 50
Engraving 180 illustrations for Monograph XV of the U. S. Geological Survey.....	1, 939. 00
Engraving 56 illustrations for Monograph XVI of the U. S. Geological Survey.....	1, 098. 00
Engraving 30 illustrations for Monograph of Lake Bonneville, U. S. Geological Survey..	42. 50
Engraving 27 illustrations for Astronomical and Meteorological Observations for 1885	443. 00
Engraving 1 illustration for Report on European Dockyards.....	2. 00
Engraving 1 illustration for Memoirs of National Academy of Science for 1885.....	2. 00
Engraving 16 illustrations for Education in Alabama	220. 00
Engraving 2 illustrations for History of Mathematical Teachings in the United States....	2. 00
Engraving 48 illustrations for General Information series, No. 8.....	93. 50
Engraving 1 illustration for form No. 1011, Post Office Department.....	8. 00
Engraving 1 illustration for form No. 1124, Post Office Department	10. 00
Engraving 17 illustrations for Report of Smithsonian Institution for 1887, Part 1.....	46. 00
Engraving 144 illustrations for Report of Smithsonian Institution 1887, Part 2.....	264. 00
Engraving 7 illustrations for Report of Smithsonian Institution, 1888, Part 1	12. 00
Engraving 239 illustrations for Report of Smithsonian Institution, 1888, Part 2.....	929. 00
Engraving 11 illustrations for Bulletin of United States Fish Commission, 1887	23. 00
Engraving 57 illustrations for Bulletin of United States Fish Commission, 1888.....	809. 00
Engraving 76 illustrations for report of Commissioner of Fish and Fisheries, 1887 ...	205. 50
Engraving 15 illustrations for Report of Commissioner of Fish and Fisheries, 1889.....	51. 00
Engraving 1 illustration for Court of Claims, Case No. 14842	6. 50
Engraving 3 illustrations for Court of Claims, Case No. 16147	10. 00
Engraving 2 illustrations for Court of Claims, Case No. 16310	3. 00
Engraving 1 illustration for Court of Claims, Case No. 16614	3. 00
Engraving 1 illustration for Rebellion Record, Volume XXVII, Part 3.....	4. 50
Engraving 3 illustrations for Rebellion Record, Volume XXIX, Part 1.....	18. 60
Engraving 2 illustrations for Rebellion Record, Volume XXIX, Part 2.....	10. 00
Engraving 16 illustrations for Rebellion Record, Volume XXX, Part 1.....	74. 00
Engraving 5 illustrations for Rebellion Record, Volume XXX, Part 2.....	18. 00
Engraving 6 illustrations for Rebellion Record, Volume XXX, Part 3.....	46. 50
Engraving 2 illustrations for Rebellion Record, Volume XXX, Part 4.....	14. 00
Engraving 4 illustrations for Rebellion Record, Volume XXXI, Part 1.....	20. 00
Engraving 1 illustration for Rebellion Record, Volume XXXI, Part 2.....	7. 00
Engraving 2 illustrations for Instructions for Measuring rate of Evaporation from Water Surfaces	4. 00
Engraving 14 illustrations for Consular Report, No. 106½.....	93. 00
Engraving 3 illustrations for Construction Report of New Field Carriages.....	34. 50
Engraving 2 illustrations for Tables of Meridional parts of the Terrestrial Spheroid.....	2. 50
Engraving 19 illustrations for Report of A. B. Johnson on Light-House Dues.....	162. 00
Engraving 1 illustration for Annual Report of Light-House Board.....	5. 75
Engraving 36 illustrations for International Signal Code.....	44. 00
Engraving 26 illustrations for Annual Report of Chief Signal Officer, 1889, Part 2.....	51. 00
Engraving 8 illustrations for Report of Board of Visitors to the United States Military Academy, 1889.....	43. 00
Engraving 1 illustration for Annual Report of Public Printer, 1889	6. 00
Engraving 1 illustration for Report of the Secretary of the Interior (Governor of Wyoming).....	7. 00
Engraving 14 illustrations for the Report of the Secretary of the Interior (Hospital of the Insane).....	25. 00
Engraving 42 illustrations for Report of Supervising Surgeon-General of Marine-Hospital Service, 1889.....	329. 00
Engraving 5 illustrations for North American Fauna, No. 1.....	24. 00
Engraving 15 illustrations for North American Fauna, No. 2.....	71. 00
Engraving 1 illustration for facsimile autograph of C. E. Mitchell	1. 50
Engraving 22 illustrations for Annual Report of Life-Saving Service, 1889.....	28. 00
Engraving 25 illustrations for Official Gazette of the United States Patent Office	39. 50
Engraving 85 illustrations for Testimony before Senate Select Committee on Irrigation and Reclamation of Arid Lands	762. 50
Engraving 2 illustrations for Hearing before House Select Committee on Irrigation of Arid Lands in the United States	45. 00

No. 9.—*Disbursements on account of lithographing and engraving, etc.*—Continued.

Engraving 38 illustrations for Annual Report of the Chief of Engineers, 1889.....	\$1, 090. 50
Engraving 1 illustration for Examination of Engineers.....	2. 50
Engraving 10 illustrations for Centennial Exposition at Melbourne, Australia.....	82. 00
Engraving 1 illustration for Daily Protocols of the Maritime Conference.....	3. 00
Engraving 3 illustrations for report on the International Meteorologic Congress held at Paris, 1889.....	10. 00
Engraving 31 illustrations for Annual Report of Bureau of Construction and Repairs.....	362. 00
Engraving 6 illustrations for Annual Report of the Navy Yard Commission.....	64. 00
Engraving 2 illustrations for Annual Report of Ordnance Bureau.....	18. 25
Engraving 3 illustrations for Report of Chief of Ordnance, 1889.....	3. 00
Engraving 30 illustrations for History of Higher Education in Indiana.....	289. 00
Engraving 4 illustrations for Quarterly Report No. 4, 1888 and 1889, Bureau of Statistics.....	24. 00
Engraving 1 illustration for Quarterly Report, second quarter, 1890, Bureau of Statistics.....	19. 00
Engraving 4 illustrations for Report of Commissioners of the District of Columbia, 1889.....	20. 00
Engraving 2 illustrations for Congressional Directory, first session Fifty-first Congress.....	19. 00
Engraving 42 illustrations for Congressional Directory, first session Fifty-first Congress, third edition.....	252. 00
Engraving 2 illustrations for Nautical Almanac, 1893.....	33. 00
Engraving 3 illustrations for American Ephemeris and Nautical Almanac, 1893.....	14. 00
Engraving 1 illustration for Hearings before Committee on Ways and Means on Revision of the Tariff.....	10. 00
Engraving 1 illustration for Estimate of Deficiencies, 1890 and prior years.....	5. 00
Engraving 1 illustration for Annual Report of Commissioner of Indian Affairs, 1889.....	8. 00
Engraving 1 illustration for Manual of Surveying Instructions.....	2. 00
Engraving 3 illustrations for Investigation of Ballot box Forgery Case in Ohio.....	22. 00
Engraving 10 illustrations for Fleet Drill Book.....	35. 00
Engraving 80 illustrations for Bibliography of the Algonquin Language.....	645. 00
Engraving 1 illustration for Testimony on Transportation and Sale of Meat Products.....	26. 00
Engraving 1 illustration for English Eskimo Vocabulary.....	8. 00
Engraving 1 illustration for Mineral Resources of the United States, 1888.....	8. 00
Engraving 2 illustrations for Tide Tables of the Pacific Coast of the United States, 1891.....	18. 00
Engraving 2 illustrations for Schedule of Material required for Battle ship <i>Texas</i>	8. 00
Engraving 1 illustration for Senate Ex. Doc. No. 209, second session Forty-sixth Congress, Part 2.....	2. 50
Engraving 2 illustrations for Senate Ex. Doc. No. 57, first session Fiftieth Congress.....	2. 00
Engraving 1 illustration for Senate Ex. Doc. No. 145, second session Fiftieth Congress.....	6. 00
Engraving 1 illustration for Senate Ex. Doc. No. 2, first session Fifty-first Congress.....	13. 00
Engraving 1 illustration for Senate Ex. Doc. No. 16, first session Fifty-first Congress.....	5. 00
Engraving 3 illustrations for Senate Ex. Doc. No. 29, first session Fifty-first Congress.....	40. 00
Engraving 1 illustration for Senate Ex. Doc. No. 44, first session Fifty-first Congress.....	36. 00
Engraving 2 illustrations for Senate Ex. Doc. No. 53, first session Fifty-first Congress.....	5. 00
Engraving 1 illustration for Senate Ex. Doc. No. 97, first session Fifty-first Congress.....	2. 00
Engraving 1 illustration for Senate Ex. Doc. No. 109, first session Fifty-first Congress.....	47. 00
Engraving 21 illustrations for Senate Mis. Doc. No. 92, second session Forty-ninth Congress.....	232. 00
Engraving 2 illustrations for Senate Mis. Doc. No. 8, first session Fifty-first Congress.....	85. 00
Engraving 5 illustrations for Senate Mis. Doc. No. 34, first session Fifty-first Congress.....	29. 00
Engraving 1 illustration for Senate Mis. Doc. No. 48, first session Fifty-first Congress.....	6. 00
Engraving 1 illustration for Senate Report No. 561, first session Fifty-first Congress.....	3. 50
Engraving 1 illustration for Executive E.....	3. 00
Engraving 1 illustration for House Ex. Doc. No. 16, first session Fiftieth Congress.....	1. 00
Engraving 4 illustrations for House Ex. Doc. No. 58, first session Fifty-first Congress.....	40. 00
Engraving 1 illustration for House Ex. Doc. No. 211, first session Fifty-first Congress.....	1. 25
Engraving 1 illustration for House Ex. Doc. No. 217, first session Fifty-first Congress.....	1. 50
Engraving 1 illustration for House Ex. Doc. No. 357, first session Fifty-first Congress.....	8. 00
Engraving 4 illustrations for House Mis. Doc. No. 134, second session Fiftieth Congress.....	56. 00
Engraving 1 illustration for House Mis. Doc. No. 77, first session Fifty-first Congress.....	4. 00
Engraving 1 illustration for House Mis. Doc. No. 184, first session Fifty-first Congress.....	24. 00
Engraving 1 illustration for House Report No. 911, first session Fifty-first Congress.....	6. 00
Engraving 1 illustration for House Report No. 970, Part 2, first session Fifty-first Congress.....	9. 50

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No. 10.—*Statement showing the disbursements on account of printing Annual Report (1888) of Commissioner of Agriculture during the fiscal year ended June 30, 1890.*

Wages of employes		\$59,197.44
Materials, etc.:		
2 brass stamps, at \$6.50.....		13.00
3 $\frac{1}{4}$ yards rubber blankets, at \$12.....	\$34.20	
4 $\frac{1}{2}$ yards rubber blankets	44.33	
1 $\frac{1}{2}$ yards rubber blankets, at \$18.....	19.00	
		97.53
1,400 pounds cut ink, at 65 cents		910.00
1,200 pounds glue, at 11.7 cents.....		140.40
305 dozen spools thread, at \$1.50.....	457.50	
504 pounds thread, at 83 cents.....	418.32	
299 pounds thread	215.28	
		1,091.10
300 pieces book cloth, at \$4.18	1,254.00	
1,017 pieces book cloth, at \$4.25	4,322.25	
		5,576.25
233 packs imitation gold leaf, at \$1.18.....		274.94
168 pounds twine, at 31 cents.....		52.08
7 barrels flour, at \$4.42		30.94
25,000 pounds binders' boards, at 2.4 cents	\$600.00	
109,350 pounds binders' boards, at 2.3 cents	2,515.05	
		3,115.05
20 pounds sponges, at \$2.15.....		43.00
233 pounds orange shellac, at 24 cents.....		55.92
8 dozen bottles sweet oil, at 60 cents		4.80
52 gallons benzine, at 7.3 cents		3.80
562 pounds cotton waste, at 8.8 cents.....		49.45
4 dozen lye brushes, at \$4.10		16.40
1,200 yards muslin, at 4.4 cents		52.80
700 pounds roller composition, at 30 cents.....		210.00
77 pounds borax, at 10 cents		7.70
28 reams hardware paper, at \$4		112.00
104 gallons machine oil, at 60 cents		62.40
2 dozen brooms, at \$2.90.....		5.80
404,000 copies of 16 illustrations for Annual Report of the Commissioner of Agriculture, 1888.....		14,410.10
M. F. printing paper, 24 by 38 inches, 45-pound:		
268,713 pounds, at 5.1 cents	\$13,704.37	
242,440 pounds, at 5.3 cents	12,849.31	
		26,553.68
M. F. printing paper, 24 by 38 inches, 48-pound, 410 reams, at \$2.352.....		964.32
20 reams Manilla paper, at \$7.50.....		150.00
		113,200.90

No. 11.—*Statement showing the disbursements on account of printing Annual Report (1889) of the Secretary of Agriculture during the fiscal year ended June 30, 1890.*

Wages of employes		\$16,140.10
Materials, etc.:		
1,000 pounds glue, at 11.1 cents		111.00
100 dozen spools thread, at \$1.50.....		150.00
300 pieces book cloth, at \$4.25.....		1,275.00
100 packs imitation gold leaf, at \$1.18		118.00
288 pounds twine, at 29 cents		83.52
5 barrels flour, at \$4.42.....		22.10
4,000 pounds binders' boards, at 2.3 cents.....		92.00
20 pounds sponges, at \$2.15		43.00
200 pounds orange shellac, at 24 cents.....		48.00
6 dozen bottles sweet oil, at 60 cents.....		3.60
104 gallons benzine, at 7.3 cents.....		7.59
1 $\frac{1}{2}$ yards rubber blankets, at \$14.40.....		20.00
100 pounds cotton waste, at 8.8 cents.....		8.80
2 dozen lye brushes, at \$4.10		8.20
1,300 yards muslin, at 4.4 cents		57.20

No. 11.—*Statement showing the disbursements on account of printing Annual Report (1889) of the Secretary of Agriculture during the fiscal year ended June 30, 1890—Continued.*

Materials, etc.—Continued:

702 pounds roller composition, at 30 cents.....	\$210. 60
70 pounds borax, at 10 cents	7. 00
14 reams hardware paper, at \$4	56. 00
105 $\frac{66}{100}$ gallons machine oil, at 45 cents.....	47. 55
1 dozen brooms.....	2. 90
500 pounds soap, at 4.5 cents	22. 50
2, 905 pounds press ink, at 15 cents.....	435. 75
24 barrels sawdust, at 15 cents.....	3. 60
50 pounds soapstone, at 6 cents	3. 00
1 large cutter	396. 00
2 brass stamps.....	8. 88
2 printing presses.....	4, 500. 00
436, 321 pounds M. F. printing paper, 24 by 38 inches, 45 pounds, at 4.3 cents.....	18, 761. 78
935 reams S. and S. C. printing paper, 38 by 48 inches, 100 pounds, at \$5.40.....	5, 049. 00
124, 934 pounds plate paper, at 9.8 cents.....	12, 244. 02
Engraving 20 illustrations for Annual Report of the Secretary of Agriculture, 1889	242. 00
	60, 178. 69

No. 12.—*Statement showing the disbursement on account of publication of the Tenth Census Reports during the fiscal year ended June 30, 1890*

Wages of employés.....	\$103. 19
200 copies of 8 illustrations for Census Report.....	155. 00
	258. 19

No. 13.—*Statement showing disbursements on account of removal and storage of certain material, Government Printing Office, during the fiscal year ended June 30, 1890.*

Rent.....	\$3, 719. 88
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No. 14.—*Statement showing the disbursements on account of printing Third Annual Report of Commissioner of Labor for the fiscal year ended June 30, 1890.*

Wages of employés.....	\$186. 40
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No. 15.—*Statement showing the disbursements on account of printing Fourth Annual Report of Commissioner of Labor for fiscal year ended June 30, 1890.*

Wages of employés.....	\$5, 978. 42
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Materials, etc.:

1, 249 pounds of book ink, at 25 cents.....	312. 25
130 pieces book cloth, at \$4.25	552. 50
11 pounds sponges, at \$2.15	23. 65
2 dozen lye brushes, at \$4.10.....	8. 20
100 pounds cotton waste, at 8.8 cents	8. 80
46 pounds twine, at 29 cents	13. 34
1 dozen bottles sweet oil.....	. 60
1 barrel flour	4. 42
80 pounds thread, at 72 cents.....	\$57. 60
30 dozen spools thread, at \$1.50.....	45. 00
	102. 60
7 pounds borax, at 10 cents	. 70
23 pounds orange shellac, at 24 cents	5. 52
60 packs imitation gold leaf, at \$1.18.....	70. 80
120 pounds glue, at 11.1 cents	13. 32
200 yards cotton, at 13 $\frac{2}{3}$ cents.....	27. 24
200 pounds roller composition, at 30 cents.....	60. 00
53 gallons benzine, at 7.3 cents.....	3. 87
3 reams hardware paper, at \$4	12. 00
2 $\frac{7}{8}$ reams manilla paper, at \$7.50.....	17. 64
13, 250 pounds binders' board, at 2.3 cents.....	304. 75
825 reams M. F. printing paper, 38 x 48 inches, 96-pound, at \$4.704.....	3, 880. 79
	11. 401. 41

No. 16.—*Statement showing the disbursements on account of printing Annual Bulletins (1887) of Bureau of Ethnology for the fiscal year ended June 30, 1880.*

Wages of employés.....	\$116.08
Materials, etc.:	
10 $\frac{7}{10}$ reams cover paper, at \$2.304.....	23.49
24 $\frac{4}{10}$ reams S. and S. C. printing paper, 38 by 48 inches, 100-pound, at \$5.80	140.36
	279.93

No. 17.—*Statement showing the disbursements, on account of printing Fourth and Fifth Annual Reports of Bureau of Animal Industry, for the fiscal year ended June 30, 1890.*

Wages of employés.....	\$10,133.36
Materials, etc.:	
965 pounds press ink, at 15 cents	144.75
1 barrel flour	4.42
1 dozen bottles sweet oil.....	.60
30 packs imitation gold leaf, at \$1.18.....	35.40
30 pounds orange shellac, at 24 cents	7.20
10 pounds borax, at 10 cents.....	1.00
30 gallons alcohol, at \$2.22.....	66.60
60 dozen spools thread, at \$1.50	90.00
2 pounds sponges, at \$2.15	4.30
160 pieces book cloth, at \$4.25	680.00
16,750 pounds binder's boards, at 2.3 cents	385.25
60 pounds twine, at 29 cents.....	17.40
150 pounds glue, at 11.1 cents.....	16.65
4 reams hardware paper, at \$4	16.00
2 reams manilla paper, at \$8.52	17.04
77,830 pounds M. F. printing paper, 24 by 38 inches, 45-pound, at 5.1 cents	3,969.33
12,722 pounds plate paper, at 9.9 cents.....	1,259.47
3,460 pounds lithographic paper, at 8.7 cents.....	301.02
50,000 copies of 25 illustrations for Fourth and Fifth Annual Reports of Bureau of Animal Industry	2,597.33
Engraving 2 illustrations for Fourth and Fifth Annual Reports of Bureau of Animal Industry	4.50
	19,751.62

No. 18.—*Statement showing disbursements on account of printing decisions of Department of the Interior regarding public lands and pensions, for the fiscal year ended June 30, 1890.*

Wages of employés.....	\$304.51
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No. 19.—*Statement showing the disbursements on account of enlargement of building, Government Printing Office, during the fiscal year ended June 30, 1890.*

55 pounds castings, at 3.5 cents.....	\$1.92
33,200 bricks, at \$7.50.....	249.00
10,200 bricks, at \$10	102.00
35 pounds washers, at 4 cents	1.40
Frames and transoms.....	53.25
57 loads gravel, at 60 cents.....	34.20
38 loads sand, at 85 cents.....	32.30
1 tin roof.....	675.00
9 pulleys	43.64
100 barrels cement, at \$1.....	100.00
35 loads broken stone, at \$1.33	46.55
Machinery for transmission power	166.50
1 tank.....	84.80
Boxing	2.50
	1,593.06

No. 20.—*Statement showing the disbursements on account of engine and boiler, Government Printing Office, during the fiscal year ended June 30, 1890.*

1 compound engine.....	4,850.00
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No. 21.—Statement of the estimated cost of printing, binding, etc., documents printed by authority of law, joint or concurrent resolutions, or by order of either house of Congress, during the fiscal year ended June 30, 1890, and how distributed.

[Of the number of copies printed, those marked (*) embrace the usual or regular number, which are not included in the general distribution of the public documents.]

Title of document.	By what authority printed.	Num-ber of pages.	Number of copies.	Cost of litho-graphing and en-graving.	Cost of com-posi-tion, stereo-typing, presswork, in-folding, in-serting plates, etc.	Cost of paper.	Cost of binding.	Total cost.	How distributed.
PRINTED BY AUTHORITY OF LAW, JOINT OR CONCURRENT RESOLUTIONS.									
Abridgment of Message and Documents, 2d session 50th Congress.	Sec. 3798, R. S.	1, 194	35, 000	.....	\$8, 904. 85	\$6, 947. 83	\$7, 000. 00	\$22, 852. 68	10,000 Senate, 25,000 House.
Message of the President and Foreign Relations, 1888 (H. Ex. Doc. No. 1, part 1, vol. 1, 2d session 50th Congress).	do	1, 150	*6, 606	\$119. 62	4, 424. 06	1, 321. 35	1, 080. 00	6, 945. 03	2,000 Senate, 4,000 House.
Message of the President and Foreign Relations, 1888 (H. Ex. Doc. No. 1, part 1, vol. 2, 2d session 50th Congress).	do	1, 002	*6, 606	34. 90	3, 694. 83	1, 148. 46	1, 080. 00	5, 958. 19	Do.
Report of the Secretary of War, 1888—Report Chief Signal Officer (H. Ex. Doc. No. 1, part 2, vol. 4, part 1, 2d session 50th Congress).	do	420	*3, 606	13. 20	2, 527. 28	258. 54	480. 00	3, 279. 02	1,000 Senate, 2,000 House.
Report of the Postmaster-General, 1888 (H. Ex. Doc. No. 1, part 4, 2d session 50th Congress).	do	1, 066	*3, 606	.....	6, 915. 86	609. 23	600. 00	8, 185. 09	Do.
Report of the Secretary of the Interior, 1888—Report of the Commissioner of the Land Office, etc. (H. Ex. Doc. No. 1, part 5, vol. 1, 2d session 50th Congress).	do	704	*3, 606	5. 50	3, 223. 11	448. 01	540. 00	4, 216. 62	Do.
Report of the Secretary of the Interior, 1888—Report of the Commissioner of Indian Affairs, etc. (H. Ex. Doc. No. 1, part 5, vol. 2, 2d session 50th Congress).	do	978	*3, 606	78. 73	5, 112. 81	707. 53	540. 00	6, 439. 07	Do.
Report of the Secretary of the Interior, 1888—Report of Commissioner of Pensions, etc. (H. Ex. Doc. No. 1, part 5, vol. 3, 2d session 50th Congress).	do	1, 044	*3, 606	152. 55	4, 513. 11	742. 02	540. 00	5, 947. 68	Do.

Report of the Secretary of the Interior, 1888—Report of the Commissioner of Education, 1887-'88 (H. Ex. Doc. No. 1, part 5, vol. 5, 2d session 50th Congress).	Sec. 3798, R. S., and concurrent resolution, Jan. 8, 1889.	1, 224	*41, 606	28. 60	15, 866. 46	8, 962. 22	8, 140. 00	32, 997. 28	7,000 Senate, 14,000 House, 20,000 Commissioner of Education.
Report of the Secretary of the Interior, 1888—Report of the Commissioner of Labor (H. Ex. Doc. No. 1, part 5, vol. 6, 2d session 50th Congress).	Sec. 3798, R. S.	632	*3, 606	.....	4, 626. 76	389. 33	540. 00	5, 556. 09	1,000 Senate, 2,000 House.
Report of the Secretary of War, 1889 (H. Ex. Doc. No. 1, part 2, vol. 1, 1st session 51st Congress).	do	1, 156	*3, 606	159. 50	6, 624. 99	1, 007. 93	660. 00	8, 452. 42	Do.
Report of the Secretary of War, 1889—Report Chief of Engineers (H. Ex. Doc. No. 1, part 2, vol. 2, part 1, 1st session, 51st Congress).	do	888	*3, 606	} 2,597.08	13, 931. 16	6, 414. 33	4, 234. 80	27, 177. 37	Do.
Report of the Secretary of War, 1889—Report Chief of Engineers (H. Ex. Doc. No. 1, part 2, vol. 2, part 2, 1st session 51st Congress).	do	732	*3, 606						
Report of the Secretary of War, 1889—Report Chief of Engineers (H. Ex. Doc. No. 1, part 2, vol. 2, part 3, 1st session 51st Congress).	do	720	*3, 606						
Report of the Secretary of War, 1889—Report Chief of Engineers (H. Ex. Doc. No. 1, part 2, vol. 2, part 4, 1st session 51st Congress).	do	718	*3, 606						
Report of the Secretary of War, 1889—Report Chief of Ordnance (H. Ex. Doc. No. 1, part 2, vol. 3, 1st session 51st Congress).	do	398	*3, 606	272. 80	1, 975. 56	944. 43	540. 00	3, 732. 79	Do.
Report of the Secretary of the Navy, 1889 (H. Ex. Doc. No. 1, part 3, 1st session 51st Congress).	do	844	*3, 606	1, 629. 65	5, 715. 63	3, 497. 98	1, 500. 00	12, 343. 26	Do.
Report of the Postmaster-General, 1889 (H. Ex. Doc. No. 1, part 4, 1st session 51st Congress).	do	1, 104	*3, 606	.....	7, 202. 67	694. 85	600. 00	8, 497. 52	Do.
Report of the Secretary of the Treasury, 1889—Finance Report (H. Ex. Doc. No. 2, 1st session 51st Congress).	do	1, 126	*3, 606	19. 80	6, 574. 88	695. 53	600. 00	7, 890. 21	Do.
Report of the Secretary of the Treasury, 1889—Commerce and Navigation of the United States (H. Ex. Doc. No. 6, part 1, 1st session 51st Congress).	do	1, 124	*8, 756	.....	9, 820. 53	1, 723. 62	1, 630. 00	13, 174. 15	2,000 Senate, 6,150 House.

No. 21.—Statement of the estimated cost of printing, binding, etc.—Continued.

Title of document.	By what authority printed.	Number of pages.	Number of copies.	Cost of litho- graphing and en- graving.	Cost of composi- tion, stereo- typing, presswork, folding, in- serting plates, etc.	Cost of paper.	Cost of binding.	Total cost.	How distributed.
PRINTED BY AUTHORITY OF LAW, OR JOINT CONCURRENT RESOLUTIONS—continued.									
Report of the Secretary of the Treasury, 1889—Commerce and Navigation of the United States, Internal Commerce (H. Ex. Doc. No. 6, part 2, 1st session 51st Congress).	Sec. 3798, R. S.	932	*8, 756	.....	\$6, 084. 04	\$1, 397. 49	\$1, 467. 00	\$8, 948. 53	2, 000 Senate, 6, 150 House.
Report of the Attorney-General, 1889 (H. Ex. Doc. No. 7, 1st session 51st Congress).	do	294	*3, 606	.....	1, 416. 52	193. 12	430. 00	2, 089. 64	1, 000 Senate, 2, 000 House.
Commercial Relations, 1887 (H. Ex. Doc. No. 402, 1st session 50th Congress).	do	1, 114	*5, 606	\$151. 08	6, 900. 78	1, 088. 79	900. 00	9, 040. 65	2, 000 Senate, 3, 000 House.
Third Annual Report of the Commissioner of Labor.	Concurrent resolu- tion, Feb. 16, 1889.	1, 172	10, 000	.....	2, 362. 30	2, 071. 58	2, 200. 00	6, 633. 88	Department of Labor.
Second Annual Report of the Interstate Commerce Commission (S. Ex. Doc. No. 60, 2d session 50th Congress).	Concurrent resolu- tion, Feb. 19, 1889.	356	*6, 747	.....	1, 578. 16	421. 50	900. 00	2, 899. 66	2, 000 Senate, 4, 000 House.
Annual Report of the Smithsonian Institu- tion, 1886—Report of the National Mu- seum (H. Mis. Doc. No. 170, part 2, 2d session 49th Congress).	Concurrent resolu- tion, Oct. 1, 1888.	856	*16, 606	308. 00	5, 540. 21	2, 613. 17	2, 880. 00	11, 341. 38	3, 000 Senate, 6, 000 House, 7, 000 Smithsonian In- stitution.
Annual Report of the Smithsonian Institu- tion, 1887 (H. Mis. Doc. No. 600, part 1, 1st session 50th Congress).	do	756	*16, 606	50. 60	4, 249. 43	2, 259. 41	2, 880. 00	9, 439. 44	Do.
Annual Report of the Smithsonian Institu- tion, 1887—Report of the National Mu- seum (H. Mis. Doc. No. 600, part 2, 1st session 50th Congress).	do	790	*16, 606	820. 20	5, 500. 82	2, 935. 63	2, 880. 00	12, 136. 65	Do.
Report of the Superintendent of the United States Coast and Geodetic Survey, 1887 (H. Ex. Doc. No. 17, 1st session 50th Congress).	Concurrent resolution, Sept. 28, 1888.	552	*5, 606	1, 583. 45	5, 550. 59	4, 379. 20	3, 181. 80	14, 697. 04	1, 000 Senate, 2, 000 House 2, 000 Superintendent Coast and Geodetic Sur- vey.

Report of the Commissioner of Fish and Fisheries, 1886 (S. Mis. Doc. No. 90, 2d session 49th Congress).	Concurrent resolution, Mar. 2, 1887.	1, 130	*11, 347	643.72	7, 099.59	3, 131.88	2, 650.00	13, 525.19	3,000 Senate, 6,000 House, 1,500 Fish Commission, 100 for sale by Public Printer.
Bulletin of the United States Fish Commission, 1887, vol. 7 (H. Mis. Doc. No. 136, 2d session 50th Congress).	Joint resolution, Feb. 14, 1881.	484	*5, 606	347.05	2, 045.03	781.31	760.00	3, 933.39	1,000 Senate, 2,500 House, 1,500 Fish Commission.
The Fishery Industries of the United States, sections 3 and 4, History of the Aquatic Animals (S. Mis. Doc. No. 124, 1st session 47th Congress).	Concurrent resolution, July 21, 1882.	430*	*10, 400	573.76	5, 448.93	3, 058.93	3, 475.00	12, 556.62	2,500 Senate, 5,000 House, 1,500 Fish Commission, 500 for sale by Public Printer.
The Fishery Industries of the United States, section 5, part 2, History of Aquatic Animals (S. Mis. Doc. No. 124, 1st session 47th Congress).	do	902	*10, 400	.....	6, 447.39	3, 526.07	3, 475.00	13, 448.46	Do.
The Fishery Industries of the United States, section 5, part 3, 255 plates, History of Aquatic Animals (S. Mis. Doc. No. 124, 1st session 47th Congress).	do	32	*10, 400	2, 295.04	3, 078.33	4, 015.97	3, 150.00	12, 539.34	Do.
Congressional Directory, 1st edition (S. Mis. Doc. No. 13, part 1, 1st session 51st Congress).	Sec. 3801, R. S.	228	*7, 347	33.00	1, 071.60	416.47	196.53	1, 717.60	For the Committee on Printing.
Congressional Directory, 2d edition (S. Mis. Doc. No. 13, part 2, 1st session 51st Congress).	do	270	*20, 747	284.90	2, 310.65	1, 356.69	495.00	4, 447.24	Do.
Congressional Directory, 3d edition (S. Mis. Doc. No. 13, part 3, 1st session 51st Congress).	do	270	*25, 747	129.36	2, 390.87	1, 558.43	623.92	4, 702.58	Do.
Biennial Register, vol. 1 (H. Mis. Doc. No. 41, part 1, 1st session 51st Congress).	Acts of Dec. 15, 1877, and June 16, 1880.	1, 008	*3, 106	.....	10, 779.73	1, 215.42	1, 734.08	13, 729.23	2,500 Interior Department.
Biennial Register, vol. 2 (H. Mis. Doc. No. 41, part 2, 1st session 51st Congress).	do	1, 286	*3, 106	.....	13, 816.69	1, 524.85	1, 734.08	17, 075.62	Do.
Eulogies on the late Hon. Seth C. Moffatt (H. Mis. Doc. No. 577, 1st session 50th Congress).	Joint resolution, May 21, 1888.	58	*13, 106	37.00	445.29	316.55	3, 000.00	3, 798.84	3,000 Senate, 9,500 House.
Eulogies on the late Hon. Edward White Robertson (H. Mis. Doc. No. 143, 2d session 50th Congress).	Joint resolution, Mar. 1, 1889.	64	*13, 106	37.00	418.78	342.43	3, 000.00	3, 798.21	Do.
Proceedings in accepting the statue of Lewis Cass (H. Mis. Doc. No. 145, 2d session 50th Congress).	Joint resolution, Mar. 2, 1889.	106	*13, 106	38.07	639.16	523.10	3, 000.00	4, 200.33	Do.
Annual Report of the National Academy of Sciences, 1888 (S. Mis. Doc. 163, 1st session 51st Congress).	Concurrent resolution, May 7, 1890.	42	*5, 247	.....	145.50	53.53	13.50	212.53	1,000 Senate, 2,000 House, 1,500 National Academy of Sciences.

No. 21.—Statement of the estimated cost of printing, binding, etc.—Continued.

Title of document.	By what authority printed.	Number of pages.	Number of copies.	Cost of litho-graphing and engraving.	Cost of composition, stereotyping, presswork, folding, in-setting plates, etc.	Cost of paper.	Cost of binding.	Total cost.	How distributed.
PRINTED BY AUTHORITY OF LAW, JOINT OR CONCURRENT RESOLUTIONS—continued.									
Report on the Panama Canal, by Lieut. C. C. Rogers (H. Mis. Doc. No. 599, 1st session 50th Congress).	Concurrent resolution, Sept. 27, 1888.	60	*3,606	\$1,014.64	\$315.32	\$228.48	\$9.00	\$1,567.44	500 Senate, 1,000 House, 1,500 Navy Department.
Irrigation in Egypt—translation by Maj. A. M. Miller (H. Mis. Doc. No. 134, 2d session 50th Congress).	Concurrent resolution, Mar. 2, 1889.	114	*3,606	625.68	672.69	625.55	810.60	2,734.52	1,000 Senate, 2,000 H. use.
Report on European Dockyards, by Naval Constructor Philip Hichborn (H. Mis. Doc. No. 237, 1st session 49th Congress).	Joint resolution, Feb. 14, 1889.	90	4,000	440.00	587.22	779.26	2,200.00	4,006.48	1,000 Senate, 2,000 House, 1,000 Secretary of the Navy.
Bibliography of Economic Entomology (H. Mis. Doc. No. 133, 1st session 51st Congress).	Concurrent resolution, July 6, 1882.	458	*1,606	.....	1,654.30	134.22	132.00	1,920.52	1,000 Department of Agriculture.
Fur-seal and other Fisheries of Alaska (H. Report No. 3883, 2d session 50th Congress).	Concurrent resolution, Feb. 27, 1889.	470	*10,606	321.20	2,464.11	1,184.74	1,600.00	5,570.05	2,000 Senate, 4,000 House, 1,500 Fish Commission, 1,250 Secretary of State, 1,250 Secretary of the Treasury.
Cruise of the Corwin, 1884 (H. Mis. Doc. No. 602, 1st session 50th Congress).	Concurrent resolution, Sept. 27, 1888.	128	*5,606	1,190.58	1,154.50	701.37	1,132.58	4,179.03	1,000 Senate, 2,000 House, 2,000 Treasury Department.
Cruise of the Corwin, 1885 (H. Ex. Doc. No. 153, 1st session 49th Congress).	do	102	5,000	536.80	741.00	884.57	1,187.50	3,349.87	Do.
Report of the Health Officer of the District of Columbia, 1889.	Concurrent resolution, Mar. 25, 1890.	194	2,500	143.00	170.46	155.71	400.00	869.11	100 Senate, 350 House, 2,050 Health Officer.
Trusts (H. Report No. 3112, 1st session 50th Congress).	Concurrent resolution, Jan. 8, 1889.	1,174	4,500	.....	1,154.90	870.30	900.00	2,925.20	1,500 Senate, 3,000 House.
Examination of Northwest coast of Gulf of Mexico, etc. (H. Ex. Doc. No. 56, 1st session 51st Congress).	Concurrent resolution, Apr. 25, 1890.	18	4,500	.....	40.93	11.85	.....	52.78	Do.

Methods of doing business in the Executive Departments (S. Report No. 507, part 1, 1st session 50th Congress).	Concurrent resolution, Jan. 8, 1889.	276	6,000	.....	361.80	309.81	1,080.00	1,751.61	2,000 Senate, 4,000 House.
Methods of doing business in the Executive Departments (S. Report No. 507, part 2, 1st session 50th Congress.)	do	974	6,000	.....	1,181.65	1,034.93	1,080.00	3,296.58	Do.
Methods of doing business in the Executive Departments (S. Report No. 507, part 3, 1st session 50th Congress.)	do	996	6,000	.....	1,220.40	1,001.45	1,080.00	3,301.85	Do.
Report of the Zoölogical Park Commission (H. Mis. Doc. No. 72, 1st session 51st Congress).	Concurrent resolution Mar. 24, 1890.	8	1,000	22.00	13.40	8.94	.....	44.34	250 Senate, 500 House, 250 Zoölogical Park Commission.
Tariff hearings before the Committee on Ways and Means (H. Mis. Doc. No. 176, 1st session 51st Congress).	Concurrent resolution, April 21, 1890.	1,410	*15,606	11.00	8,298.40	3,764.62	2,550.00	14,624.02	5,000 Senate, 10,000 House.
Report on Meat Products (S. Report No. 829, 1st session 51st Congress).	Concurrent resolution, May 10, 1890.	40	30,000	.....	311.10	175.36	.....	486.46	10,000 Senate, 20,000 House.
Testimony on Meat Products (S. Report No. 829, 1st session 51st Congress.)	do	616	6,000	.....	798.15	571.30	300.00	1,669.45	2,000 Senate, 4,000 House.
Report on transportation interests of the United States and Canada (S. Report No. 847, 1st session 51st Congress).	Concurrent resolution, May 27, 1890.	56	15,000	.....	254.80	121.45	.....	376.25	5,000 Senate, 10,000 House.
Testimony on transportation interests of the United States and Canada (S. Report No. 847, 1st session 51st Congress).	do	674	6,000	.....	834.04	601.38	360.00	1,795.42	2,000 Senate, 4,000 House.
Tariff bill and report, printed together in pamphlet form.	Concurrent resolution, April 25, 1890.	98	30,000	.....	758.60	429.63	.....	1,188.23	10,000 Senate, 20,000 House.
Binding schedules of the 2d, 3d, 4th, and 10th Censuses.	Concurrent resolution, July 17, 1886.	.....	1,504	.....	.....	.....	5,062.00	5,062.00	Interior Department.
Sixth Annual Report of the Director of the Bureau of Ethnology (H. Mis. Doc. No. 571, 1st session 50th Congress).	Joint resolution Mar. 2, 1885.	734	*16,088	9,226.87	5,604.13	6,577.63	7,019.20	28,427.83	3,500 Senate, 7,000 House, 5,000 Bureau of Ethnology.
The Circular, Square, and Octagonal Earth-works of Ohio.	Concurrent resolution, July 28, 1888.	36	6,000	143.00	273.62	147.69	18.00	587.31	1,000 Senate 2,000 House, 3,000 Bureau of Ethnology.
Bibliography of the Muskogean Languages	do	120	6,000	.....	1,029.70	154.95	18.00	1,202.65	Do.
Geographical and Geological Explorations and Surveys West of the 100th Meridian, Vol. 1.	Acts of June 23, 1884, and Feb. 15, 1885.	780	2,000	1.65	3,300.46	931.24	1,100.00	5,333.35	250 Senate, 950 House, 800 War Department.
Report of the Secretary of the Interior, 1886—Seventh Annual Report of the Director of the U. S. Geological Survey (H. Ex. Doc. No. 1, part 5, vol. 3, 2d session 49th Congress).	Sec. 3,798 R. S., and joint resolution Mar. 2, 1885.	676	*19,106	9,001.38	10,727.15	10,518.61	8,587.00	38,834.14	4,500 Senate, 9,000 House, 5,000 Geological Survey.

No. 21.—Statement of the estimated cost of printing, binding, etc.—Continued.

Title of document.	By what authority printed.	Num-ber of pages.	Number of copies.	Cost of litho-graphing and en-graving.	Cost of composi-tion, stereo-typing, presswork, folding, in-serting plates, etc.	Cost of paper.	Cost of binding.	Total cost.	How distributed.
PRINTED BY AUTHORITY OF LAW, JOINT OR CONCURRENT RESOLUTIONS—continued.									
U. S. Geological Survey Monograph, vol. 15, in two parts—Younger Mesozoic Flora, by Fontaine (H. Mis. Doc. No. 147, 2d session 50th Congress).	Act of Mar. 3, 1879	770	*3, 606	\$2, 132. 90	\$5, 159. 19	\$3, 157. 60	\$2, 880. 00	\$13, 329. 69	3, 000 Geological Survey.
Bulletin No. 53, U. S. Geological Survey	do	62	3, 000	246. 29	220. 46	89. 89	9. 00	565. 64	Do.
Bulletin No. 54, U. S. Geological Survey	do	328	3, 000	161. 15	1, 462. 53	207. 88	30. 00	1, 861. 56	Do.
Bulletin No. 55, U. S. Geological Survey	do	104	3, 000	22. 00	354. 65	63. 60	9. 00	449. 25	Do.
Bulletin No. 56, U. S. Geological Survey	do	78	3, 000	30. 80	282. 29	80. 14	9. 00	402. 23	Do.
Bulletin No. 57, U. S. Geological Survey	do	56	3, 000	148. 10	185. 85	57. 36	9. 00	400. 31	Do.
Bulletin No. 59, U. S. Geological Survey	do	54	3, 000	149. 77	159. 29	41. 91	9. 00	359. 97	Do.
Bulletin No. 60, U. S. Geological Survey	do	82	3, 000	12. 10	703. 36	94. 28	9. 00	818. 74	Do.
Plates for Topographic and Geologic Atlas	do			38, 251. 40				38, 251. 40	Fifth charge.
American Ephemeris and Nautical Almanac, 1892.	Joint resolution Feb. 11, 1880.	538	1, 550	76. 56	3, 149. 75	297. 93	387. 50	3, 911. 74	100 Senate, 400 House, 1, 000 Navy Department, 50 Library of Congress.
The American Nautical Almanac, 1890, 3d edition.	do	280	200		48. 05	25. 07	12. 00	85. 12	200 Navy Department.
Astronomical Papers of the American Ephemeris, vol. 4, part 1.	do	579	1, 500		4, 220. 80	267. 67	425. 00	4, 913. 47	100 Senate, 400 House, 1, 000 Navy Department.
Astronomical Papers, vol. 2, part 5, supplementary to the American Ephemeris.	do	148	1, 500		651. 35	71. 38	20. 00	742. 73	Do.
Astronomical and Meteorological Observations, 1884 (H. Mis. Doc. No. 148, 2d session 50th Congress).	Concurrent resolution July 17, 1886.	768	*2, 406		6, 631. 15	648. 54	900 00	8, 179. 69	300 Senate, 700 House, 800 Navy Department.

Laws relating to Rivers and Harbors (S. Mis. Doc. No. 91, 2d session 49th Congress).	Concurrent resolution Mar. 2, 1887.	580	*1,747	.....	1,881.41	185.29	650.00	2,716.70	1,000 War Department.
Supplement to the Revised Statutes.....	Act of June 7, 1880.....	736	300	.....	149.48	86.13	330.00	565.61	Department of State.
Revised Statutes.....	Act of May 22, 1878....	1,468	1,000	.....	623.40	565.55	1,250.00	2,438.95	Do.
Statutes at Large vol. 25	Act of June 20, 1870....	1,690	200	.....	321.69	134.98	250.00	706.67	Do.
Public Resolutions, 1st session 51st Congress, Nos. 1 to 26, inclusive (1,550 each, regular number).	Secs. 210, 3803, and 3805, R. S.	52	45,500	.....	114.62	15.31	.....	129.33	200 each for Department of State.
Public acts, 1st session 51st Congress, Nos. 1 to 52, 54 to 80, 82 to 144, 146 to 180, inclusive (1,550 each, regular number).	do	402	306,250	.....	797.65	115.24	.....	912.89	Do.
Public act, 1st session 51st Congress, No. 53 (1,550 regular number).	do	16	2,050	.....	30.32	5.11	.....	35.43	500 for Department of State.
Public acts, 1st session 51st Congress, Nos. 81 and 145 (1,550 each, regular number).	do	24	7,100	.....	72.21	12.72	.....	84.93	2,000 each for Department of State.
Private resolutions, 1st session 51st Congress, Nos. 1, 2, and 3 (1,550 each, regular number).	do	6	5,250	.....	14.37	1.73	.....	16.10	200 each for Department of State.
Private acts, 1st session 51st Congress, Nos. 1 to 452, inclusive (1,550 each, regular number).	do	906	792,750	.....	1,151.03	248.28	.....	1,399.31	Do.
Treaties, conventions, etc., 1st session 51st Congress (1,550 each, regular number).	do	40	12,300	.....	114.01	13.55	.....	127.56	500 each for Department of State.
Total .....	.....	51,425	1,819,617	76,355.03	279,401.02	114,166.89	119,195.09	589,118.03	
PRINTED BY ORDER OF THE SENATE.									
1st session 51st Congress.									
Miscellaneous printing ordered by the Senate.	Senate resolutions	19,128	110,899	127.60	13,843.50	3,280.25	2,168.50	19,419.85	Senate and committees.
EXECUTIVE DOCUMENTS (OF WHICH ONLY 747 OF THE USUAL NUMBER, 1,734, WERE PRINTED).									
Second session 50th Congress.....	Sec. 3792, R. S	60	12,591	584.10	317.72	317.57	99.64	1,319.03	See table on pp. 67 and 68
First session 51st Congress.....	do	6,562	141,472	1,879.22	11,960.12	1,427.77	.....	15,267.11	Do.
MISCELLANEOUS DOCUMENTS (OF WHICH ONLY 747 OF THE USUAL NUMBER, 1,734, WERE PRINTED).									
Second session 50th Congress	Sec. 3792, R. S	24	2,721	.....	99.44	7.44	.....	106.88	Do.
First session 51st Congress	do	1,562	132,966	198.00	5,626.52	320.22	24.00	6,168.74	Do.

• No. 21.—Statement of the estimated cost of printing, binding, etc.—Continued.

Title of document.	By what authority printed.	Number of pages.	Number of copies.	Cost of litho- graphing and en- graving.	Cost of composition, stereo- typing, presswork, folding in- serting plates, etc.	Cost of paper-	Cost of binding.	Total cost.	How distributed.
REPORTS OF COMMITTEES (OF WHICH ONLY 747 OF THE USUAL NUMBER, 1,734, WERE PRINTED).									
Second session 50th Congress.....	Sec. 3792, S. S.	976	10,617	\$1,134.50	\$2,881.46	\$683.65	\$149.40	\$4,849.01	See table on pp. 67 and 68.
First session 51st Congress	do	6,620	1,066,716	53.35	16,339.34	813.80	.....	17,206.49	Do.
MISCELLANEOUS PRINTING.									
Confidential matter.....	By order of the Senate.	4,728	2,314	179.30	4,289.30	150.20	4.50	4,623.30	Senate document room.
Bills and joint resolutions.....	Sec. 3791, R. S.	22,602	5,286,000	.....	34,841.15	6,615.82	.....	41,456.97	See table on pp. 67 and 68.
Blanks, blank books, etc	Requisition from the Secretary.	8,738	4,593,393	.....	13,502.72	853.26	7,715.38	22,071.36	For the Secretary's office
Binding reserve work, 1st session 47th Congress.	.....	.....	1,871	.....	60.00	5.40	2,083.50	2,148.90	See table on pp. 67 and 68.
Binding reserve work, 2d session 47th Congress.	.....	.....	1,820	.....	.....	.....	1,437.00	1,437.00	Do.
Binding reserve work, 2d session 48th Congress.	.....	.....	930	.....	459.52	288.75	744.00	1,492.27	Do.
Printing and binding reserve work, 1st session 49th Congress.	.....	.....	3,748	.....	747.74	504.05	3,506.25	4,758.04	Do.
Printing and binding reserve work, 2d session 49th Congress.	.....	.....	1,974	.....	769.99	459.62	1,402.50	2,632.11	Do.
Printing and binding reserve work, 1st session 50th Congress.	.....	.....	21,714	.....	7,219.84	4,319.04	15,941.75	27,480.63	Do.
Total .....	.....	71,000	11,391,746	4,156.07	112,958.36	20,046.84	35,276.42	172,437.69	
PRINTED BY ORDER OF THE HOUSE OF REPRESENTATIVES.									
1st session, 51st Congress.									
Printing ordered by the House.....	House resolutions	13,076	193,816	199.10	12,403.82	2,673.72	5,306.44	20,583.08	House and committees.

EXECUTIVE DOCUMENTS (OF WHICH ONLY 606 OF THE USUAL NUMBER, 1,726, WERE PRINTED).									
2	Second session 49th Congress.....	Sec. 3792, R. S.....	1,774	606	348.37	11,592.24	711.92	.....	12,652.53
Mis.	First session 50th Congress.....	do.....	2,362	36,538	370.34	12,290.83	727.50	.....	13,388.67
3	Second session 50th Congress.....	do.....	1,696	1,212	.....	11,381.03	384.17	.....	11,765.20
5	First session 51st Congress.....	do.....	8,840	257,550	6,585.33	42,781.65	5,260.55	709.02	55,336.55
	MISCELLANEOUS DOCUMENTS (OF WHICH ONLY 606 OF THE USUAL NUMBER, 1,726, WERE PRINTED).								
	Second session, 50th Congress.....	Sec. 3792, R. S.....	3,816	27,670	208.74	4,190.55	634.77	39.00	5,073.06
	First session 51st Congress.....	do.....	2,104	132,108	74.60	8,215.07	1,412.18	.....	9,701.85
	REPORTS OF COMMITTEES (OF WHICH ONLY 606 OF THE USUAL NUMBER, 1,726, WERE PRINTED).								
	Second session 50th Congress.....	Sec. 3792, R. S.....	1,124	12,920	.....	3,427.11	522.83	.....	3,949.94
	First session 51st Congress.....	do.....	9,788	1,565,296	276.65	23,188.07	1,021.35	.....	24,486.07
	MISCELLANEOUS PRINTING.								
	Bills and joint resolutions.....	Sec. 3792, R. S.....	41,606	4,435,295	.....	57,046.65	6,063.87	.....	63,110.52
	Blanks, blank books, etc.....	Requisition from the clerk.	12,592	5,371,530	.....	35,213.49	1,754.38	40,887.87	77,855.74
	Binding reserve work, 3d session 46th Congress.	.....	.....	3,117	.....	.....	.....	2,965.50	2,965.50
	Binding reserve work, 1st session 47th Congress.	.....	.....	4,176	.....	.....	.....	5,257.35	5,257.35
	Binding reserve work, 2d session 47th Congress.	.....	.....	8,352	.....	.....	.....	11,729.25	11,729.25
	Printing and binding reserve work, 1st session 49th Congress.	.....	.....	9,795	.....	746.81	573.50	8,610.30	9,930.61
	Printing and binding reserve work, 2d session 49th Congress.	.....	.....	30,240	.....	8,978.40	6,062.30	24,289.55	39,330.25
	Printing and binding reserve work, 1st session 50th Congress.	.....	.....	28,000	.....	9,699.62	5,885.83	24,289.55	39,875.00
	Total.....		98,778	12,123,221	8,063.13	241,155.34	33,688.87	124,083.83	406,991.17

See table on pp. 67 and 68.

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No. 21.—Statement of the estimated cost of printing, binding, etc.—Continued.

Title of document.	By what authority printed.	Num-ber of pages.	Number of copies.	Cost of litho-graphing and en-graving.	Cost of composi-tion, stereo-typing, presswork, in-folding, in-setting plates, etc.	Cost of paper.	Cost of binding.	Total cost.	How distributed.
LIBRARY OF CONGRESS.									
Miscellaneous documents ordered by Executive Departments, furnished the Library of Congress.			20,250	\$91.37	\$657.33	\$601.00	\$220.18	\$1,569.88	For the Library of Congress.
Binding miscellaneous reserve work.....			6,250	.....	.....	.....	5,596.50	5,596.50	
Total			26,500	91.37	657.33	601.00	5,816.68	7,166.38	

RECAPITULATION.

	Number of pages.	Number of copies.	Cost of lithograph-ing and engraving.	Cost of com-position, stereo-typing, press-work, in-folding, in-setting plates, etc.	Cost of pa-per.	Cost of bind-ing.	Total cost.
Total cost of printing, binding, etc., done by authority of law, joint or concurrent resolutions	51,425	1,819,617	\$76,355.03	\$279,401.02	\$114,166.89	\$119,195.09	\$589,118.03
Total cost of printing, binding, etc., done by order of the Senate	71,000	11,391,746	4,156.07	112,958.36	20,046.84	35,276.42	172,437.69
Total cost of printing, binding, etc., done by order of the House.....	98,778	12,123,221	8,063.13	241,155.34	33,688.87	124,083.83	406,991.17
Total cost of printing, binding, etc., done by authority of law for the Library of Congress .....	.....	26,500	91.37	657.33	601.00	5,816.68	7,166.38
Total cost of printing, binding, etc., on private orders.....	13,172	1,887,482	1,071.92	74,445.16	31,136.56	37,242.94	143,896.58
Total cost of printing speeches.....	.....	2,694,945	.....	9,633.95	8,189.76	.....	17,823.71
Total cost of paper used for proofs, etc., by this office.....	.....	.....	.....	.....	1,067.21	.....	1,067.21
Aggregate	234,375	29,943,511	89,737.52	718,251.16	208,897.13	321,614.96	1,338,500.77

DISTRIBUTION OF THE USUAL NUMBER.

The following table shows the distribution of the usual number of copies of Executive and miscellaneous documents, reports of committees, bills and joint resolutions, and Journals of both houses of Congress:

UNBOUND COPIES.

Where delivered.	Senate.			House.			
	Docu-ments.	Jour-nal.	Bills.	Docu-ments.	Jour-nal.	Public bills.	Private bills.
Document room of the House.....	353	5	326	353	5	475	100
Office of the Clerk of the House.....	20	5	15	100	25	25	.....
Library of the House.....	.....	5	.....	.....	5	.....	.....
Document room of the Senate.....	200	.....	224	125	.....	100	35
Office of Secretary of the Senate.....	11	6	15	6	6	.....	.....
Folding room of the Senate.....	145	.....	160	.....	.....	.....	.....
Library of the Senate.....	.....	5	.....	.....	5	.....	.....
Department of State.....	18	.....	10	18	.....	.....	.....
Public Printer.....	.....	4	.....	.....	4	.....	.....
Total	747	30	750	602	50	600	135

BOUND COPIES.

Where delivered.	Senate.		House.	
	Docu-ments.	Journal.	Docu-ments.	Journal.
Secretary of the Senate.....	5	78	5	78
Senate document room.....	86	25	86	25
Senate folding room.....	43	43	.....	.....
Senate Library.....	36	36	36	36
House document room.....	344	337	447	348
Clerk of the House for governors of States.....	.....	.....	.....	123
Library of the House of Representatives.....	7	7	30	15
Library of Congress.....	52	52	52	52
Department of the Interior.....	420	435	470	435
Department of State.....	2	10	2	10
Court of Claims.....	.....	2	.....	2
Total bound	995	1,025	1,128	1,124
Total unbound.....	747	30	602	50
Number required.....	1,742	1,055	1,730	1,174
Number authorized.....	1,607	1,055	1,607	1,174

Distribution of the usual number—Continued.

SUMMARY.

	Senate.			House.			
	Docu- ments.	Journal.	Bills.	Docu- ments.	Journal.	Public bills.	Private bills.
Up number.....	747	30	750	602	50	600	135
Orders and files.....	53	16	50	44	10	60	60
Number to be printed..	800	46	800	646	60	660	195
Bound	995	1, 025	.....	1, 128	1, 124	.....	.....
Total	1, 795	1, 071	.....	1, 774	1, 184	.....	.....

No. 22.—*Statement of allotments, etc., made for the Executive and Judicial Departments, and of the approximate cost of the work executed for the same, for the fiscal year ended June 30, 1890.*

Departments, etc.	Total of allotments, special appro- priations, and amounts received from Depart- ments and deposited in Treasury.	Printing.	Paper.	Blank books, bind- ing, ruling, etc.	Total.
Treasury Department	\$331, 236. 95	\$160, 547. 35	\$52, 778. 01	\$112, 299. 48	\$325, 624. 84
War Department	161, 177. 34	48, 242. 34	23, 365. 12	44, 970. 95	116, 578. 41
Navy Department	80, 599. 75	44, 000. 39	9, 584. 87	22, 346. 69	75, 931. 95
Interior, Department of.....	512, 023. 47	121, 686. 82	76, 865. 83	59, 133. 95	257, 686. 60
Patent Office.....		214, 314. 42	16, 087. 48	22, 334. 32	252, 736. 22
Post-Office Department.....	214, 903. 12	70, 735. 31	77, 421. 17	55, 155. 42	203, 311. 90
Agriculture, Department of.....	39, 772. 93	23, 351. 93	10, 411. 34	5, 184. 10	38, 947. 37
State, Department of.....	21, 851. 14	11, 763. 75	458. 95	5, 247. 69	17, 470. 39
Justice, Department of	9, 521. 61	4, 424. 08	568. 55	2, 193. 25	7, 185. 88
Supreme Court of the United States..	5, 372. 58	2, 078. 58	81. 72	366. 12	2, 526. 42
Court of Claims.....	15, 043. 22	9, 466. 10	120. 04	224. 75	9, 810. 89
Supreme court District of Columbia.	1, 574. 52	1, 210. 94	22. 99	112. 54	1, 346. 47
Library of Congress	15, 117. 74	222. 50	210. 76	10, 034. 70	10, 467. 96
Executive office.....	3, 223. 57	444. 21	42. 03	489. 17	975. 41
Labor, Department of.....	8, 596. 13	3, 524. 29	1, 476. 37	2, 384. 90	7, 385. 56
National Museum	10, 745. 16	8, 940. 13	1, 090. 83	649. 65	10, 580. 61
Public Printer .....	.....	4, 878. 73	1, 061. 56	2, 571. 19	8, 511. 48
Total	1, 430, 759. 23	729, 831. 87	271, 647. 62	345, 698. 87	1, 347, 178. 36

No. 23.—*Statement of the distribution of the bound and unbound volumes of the Congressional Record for the first session of the Fifty-first Congress.*

	Volumes.
Delivered to Senate folding room	20,604
Delivered to House folding room	33,972
Delivered to House Library	1,200
Delivered to Library of Congress	624
Delivered to officers of the House	108
Delivered to justices and officers of the Supreme Court of the United States	168
Delivered to Official Reporter of the Senate	60
Delivered to State and Territorial libraries	600
On hand	2,784
Total	60,120

The number of copies of the Record authorized by law to be printed and bound is as follows :

For Congress	10,675
For Library of Congress	52
For officers of the House	9
For Official Reporter of the Senate	5
For distribution to each State and Territorial library	50
For justices and officers of the Supreme Court of the United States	14
Total	10,805

Of the copies authorized by law to be printed and bound for Congress, 6,127 were delivered unbound upon orders of members of Congress.

Receipts on account of Congressional Record for the fiscal year ending June 30, 1890, were as follows :

From sales of Record	\$4,324.25
The amount received for speeches printed from matter contained in the Record	15,295.35
Total	19,619.60

REPORT OF THE PUBLIC PRINTER.

Name of contractor.	Description of paper.	Size.	Weight per ream.	Quantity.	Price.
	PRINTING PAPER.	Inches.	Lbs.	Reams.	Per pound.
F. W. McDowell, Philadelphia, Pa.	Best machine finish.	24 by 38	48	10,000	4.3 cents.
William M. Singerly, Philadelphia, Pa.	do	do	48	10,000	4.5 cents.
Westmoreland Paper Company, West Newton, Pa.	Best machine finish, in rolls	do	48	5,000	4.1 cents.
Do	do	do	45	5,000	4.3 cents.
William M. Singerly, Philadelphia, Pa.	do	do	48	5,000	4.3 cents.
Do	do	do	45	5,000	4.3 cents.
Westmoreland Paper Company, West Newton, Pa.	do	do	48	5,000	4.2 cents.
F. W. McDowell, Philadelphia, Pa.	do	do	48	5,000	4.3 cents.
Do	Best machine finish.	38 by 48	96	5,000	4.3 cents.
William M. Singerly, Philadelphia, Pa.	do	do	96	5,000	4.3 cents.
Do	do	Any size not enumerated above, not exceeding 38 inches in width.	.....	500	4.3 cents.
Wolf Brothers, Philadelphia, Pa.	Sized and supercalendered	24 by 32	45	1,000	5.3 cents.
F. W. McDowell, Philadelphia, Pa.	do	32 by 48	90	5,000	5.4 cents.
Armstrong Brothers, Lockhaven, Pa.	Sized and supercalendered, white or tinted	24 by 38	70	3,000	5.4 cents.
Do	do	24 by 32	60	2,500	5.4 cents.
Wolf Brothers, Philadelphia, Pa.	do	21½ by 29	40	1,000	5.3 cents.
F. W. McDowell, Philadelphia, Pa.	do	24 by 38	50	500	5.4 cents.
Do	do	38 by 48	100	1,500	5.4 cents.
Do	do	do	120	500	5.4 cents.
Do	do	22½ by 31½	50	1,500	5.4 cents.
Do	do	do	42	1,000	5.4 cents.

Do.....	do.....	do.....	do.....	40	2,500	5.4 cents.
Do.....	do.....	do.....	Any size not enumerated above, not exceeding 38 inches in width.	-----	500	5.4 cents.
WRITING PAPER, TO BE OF ANY REQUIRED WEIGHT.						
Winona Paper Company, Holyoke, Mass.....	White quarto-post.....	do.....	10 by 16.....	-----	1,500	7.4 cents.
O. F. H. Warner, Baltimore, Md.....	Blue quarto-post.....	do.....	do.....	-----	100	8.1 cents.
Winona Paper Company, Holyoke, Mass.....	White cap.....	do.....	14 by 17.....	-----	1,500	7.4 cents.
Do.....	White double cap.....	do.....	16½ by 26.....	-----	7,000	7.4 cents.
Wolf Brothers, Philadelphia, Pa.....	Laid or wove double cap, of any required color or colors..	do.....	17 by 28.....	-----	1,800	7 cents.
Winona Paper Company, Holyoke, Mass.....	White demy.....	do.....	16 by 20½.....	-----	2,000	7.4 cents.
O. F. H. Warner, Baltimore, Md.....	Laid or wove demy, of any required color.....	do.....	do.....	-----	100	8.1 cents.
Winona Paper Company, Philadelphia, Pa.....	White double demy.....	do.....	20½ by 32.....	-----	4,000	7.4 cents.
Do.....	White folio-post.....	do.....	17 by 22.....	-----	1,000	7.4 cents.
O. F. H. Warner, Baltimore, Md.....	Blue folio-post.....	do.....	do.....	-----	100	7.6 cents.
Winona Paper Company, Philadelphia, Pa.....	White double folio-post.....	do.....	22 by 34.....	-----	2,000	7.4 cents.
Alexander Balfour, Philadelphia, Pa.....	Blue double folio-post.....	do.....	do.....	-----	100	8.1 cents.
Winona Paper Company, Philadelphia, Pa.....	White medium.....	do.....	18 by 23.....	-----	1,000	7.4 cents.
O. F. H. Warner, Baltimore, Md.....	Blue medium.....	do.....	do.....	-----	100	8.1 cents.
Winona Paper Company, Philadelphia, Pa.....	White royal.....	do.....	19 by 24.....	-----	1,500	7.4 cents.
Alexander Balfour, Philadelphia, Pa.....	Blue royal.....	do.....	do.....	-----	100	8.1 cents.
Winona Paper Company, Philadelphia, Pa.....	White superroyal.....	do.....	20 by 28.....	-----	1,000	7.4 cents.
O. F. H. Warner, Baltimore, Md.....	Blue superroyal.....	do.....	do.....	-----	100	8.1 cents.
Winona Paper Company, Philadelphia, Pa.....	White imperial.....	do.....	22½ by 31.....	-----	1,100	7.4 cents.
O. F. H. Warner, Baltimore, Md.....	Blue imperial.....	do.....	do.....	-----	100	8.1 cents.
Winona Paper Company, Philadelphia, Pa.....	White, of any required size not enumerated above, and not exceeding 28 inches in width.	do.....	do.....	-----	3,000	7.4 cents.
Alexander Balfour, Philadelphia, Pa.....	Colored, of any required size not enumerated above, and not exceeding 28 inches in width.	do.....	do.....	-----	100	8.1 cents.
COVER PAPER.						
M. O. Raiguel & Co., Philadelphia, Pa.....	Golden envelopes.....	do.....	19 by 24.....	28	100	7.1 cents.
C. A. Mullin, Mt. Holly Springs, Pa.....	do.....	do.....	do.....	-----	-----	-----
Armstrong Brothers, Lock Haven, Pa.....	Any required color or colors.....	do.....	20 by 25.....	-----	1,000	5.9 cents.
Alexander Balfour, Philadelphia, Pa.....	do.....	do.....	22½ by 32.....	50	200	6 cents.

No. 24.—Statement of contracts made (by direction of the Joint Committee on Printing) for paper for the public printing, etc.—Continued.

Name of contractor.	Description of paper.	Size.	Weight per ream.	Quantity.	Price.
Conrow Brothers, New York, N. Y.....	PLATE PAPER. Sized or unsized, and of any required size, weight, or tint.	.....	.....	Pounds. 1, 000, 000	Per pound. 9.8 cents.
Mount Holly Paper Company, Mount Holly Springs, Pa.	MAP PAPER. Linen, of any required size and weight .....	.....	.....	1, 000, 000	17 cents.
Linton Brothers & Co., Pawtucket, R. I.....	WOOD-CUT PAPER. Fine coated, of any required size, weight, or tint .....	.....	.....	500, 000	9.4 cents.
Do.....	CHROMO-LITHOGRAPHIC PAPER. Double coated, of any required size, weight, or tint .....	.....	.....	500, 000	8.3 cents.
M. O. Raignel & Co., Philadelphia, Pa..... } C. A. Mullin, Mount Holly Springs, Pa..... }	MANILLA PAPER. Any required size and weight .....	.....	.....	Reams. 800	5.1 cents.
Garrett & Buchanan, Philadelphia, Pa.....	TISSUE PAPER. 20 by 30.....	.....	.....	1, 000	Per ream. 68 cents.
M. O. Raignel & Co., Philadelphia, Pa..... } C. A. Mullin, Mount Holly Springs, Pa..... }	GLAZED BOND PAPER. Any required size, weight, and color, not exceeding 24 by 38 inches.	.....	.....	Pounds. 70, 000	Per pound. 15.5 cents.
Mount Holly Paper Company, Mount Holly Springs, Pa.	ARTIFICIAL PARCHMENT. Any required size and weight.....	.....	.....	8, 000	16.5 cents.
Do.....	PARCHMENT DEED PAPER. Any required size and weight .....	.....	.....	2, 000	16.5 cents.

BRISTOL AND CARD BOARD.				Sheets.	Per sheet.
Linton Brothers & Co., Pawtucket, R. I.....	Thin bristol board.....	22 by 28.....	120	150,000	2 cents.
Do.....	Thin bristol board.....	do.....	140	150,000	2.4 cents.
Bulkley, Ward & Co., Philadelphia, Pa.....	Heavy railroad board.....	do.....	280	20,000	3.5 cents.
Do.....	White China board.....	do.....	210	10,000	2.9 cents.
Linton Brothers & Co., Pawtucket, R. I.....	Colored card board.....	do.....	210	15,000	2.8 cents.
Woolworth & Graham, New York, N. Y.....	Pearl-gray bristol board.....	21 by 31.....	130	350,000	1.4 cents.
Do.....	Melon bristol board.....	do.....	130	350,000	1.5 cents.
M. O. Raignel & Co., Philadelphia, Pa.....	Golden bristol board.....	do.....	130	10,000	1.7 cents.
C. A. Mullin, Mount Holly Springs, Pa.....	Yellow bristol board.....	do.....	130	600,000	1.5 cents.
Alexander Balfour, Philadelphia, Pa.....	Green bristol board.....	do.....	130	150,000	1.5 cents.
Woolworth & Graham, New York, N. Y.....					Per pound.
Alexander Balfour, Philadelphia, Pa.....	Colored bristol board of any required size and weight.....		.....	10,000	7.1 cents.

No. 25.—Statement of contracts made (by direction of the Joint Committee on Printing) for supplying ledger and other paper from July 1, 1890, to February 28, 1891.

REPORT OF THE PUBLIC PRINTER.

Name of contractor.	Description of paper.	Size.	Weight per ream.	Quantity.	Price.	
					Per pound.	Per ream.
	FIRST CLASS LEDGER PAPER OF ANY REQUIRED WEIGHT.	Inches.	Lbs.	Reams.	Cents.	
Beebe and Holbrook Company, Holyoke, Mass.	Cap.....	14 by 17.....	.....	1,500	12.8	.....
Fairfield Paper Company, Fairfield, Mass.	Double cap.....	17 by 28.....	.....	500	13	.....
A. G. Elliot & Co., Philadelphia, Pa.	Demy.....	16 by 21.....	.....	1,500	13.2	.....
Connecticut River Paper Company, Holyoke, Mass.	Double demy.....	21 by 32.....	.....	200	14	.....
Fairfield Paper Company, Fairfield, Mass.	Medium.....	18 by 23.....	.....	1,000	13	.....
Do.....	Royal.....	19 by 24.....	.....	800	13	.....
Beebe and Holbrook Company, Holyoke, Mass.	Super royal.....	20 by 28.....	.....	400	14.1	.....
Mount Holly Paper Company, Mount Holly Springs, Pa.	Imperial.....	23 by 31.....	.....	200	15.8	.....
Do.....	Any required size.....	.....	.....	500	14	.....
	SECOND CLASS LEDGER PAPER OF ANY REQUIRED WEIGHT.					
A. G. Elliot & Co., Philadelphia, Pa.	Cap.....	14 by 17.....	.....	500	9.7	.....
Do.....	Double cap.....	17 by 28.....	.....	200	9.7	.....
Do.....	Demy.....	16 by 21.....	.....	500	9.7	.....
Do.....	Double demy.....	21 by 32.....	.....	200	9.7	.....
Do.....	Medium.....	18 by 23.....	.....	300	9.7	.....
Do.....	Any required size.....	.....	.....	500	9.7	.....
	MANILA PAPER.					
A. G. Elliot & Co., Philadelphia, Pa.	Rope Manila of any required size.....	.....	.....	350	6.8	.....
Megargee & De Cernea, Philadelphia, Pa.	Pure bleached Manila.....	24 by 38.....	145	50	5.2	.....

TISSUE PAPER.						
A. G. Elliot & Co., Philadelphia, Pa.	Sized and calendered	21 by 32	100	.....	.....	\$1.40
Do.	Copying	18½ by 22½	100	.....	.....	2.20
Do.	do	20½ by 24½	100	.....	.....	2.60
BLOTTING PAPER.						
A. G. Elliot & Co., Philadelphia, Pa.	Blotting	19 by 24	10	.....	.....	8.80
Dobler & Mudge, Baltimore, Md.	Pink	20 by 25	10	.....	.....	1.80
TAR PAPER.						
A. G. Elliot & Co., Philadelphia, Pa.		24 by 36	100	.....	.....	3.70
PLAID, MARBLE, AND COMB PAPER.						
Louis Dejonge & Co., New York, N. Y.	Plaid	22½ by 28	30	.....	.....	6.50
Do.	do	23 by 31½	25	.....	.....	7.50
Johr Campbell & Co., New York, N. Y.	German wave, medium marble		50	.....	.....	5.85
Do.	German wave, double cap marble		50	.....	.....	5.85
Do.	German comb	20 by 25	40	.....	.....	8.75
Do.	German double cap comb		40	.....	.....	8.75
Do.	German comb	22 by 28	20	.....	.....	9.50
PAPER FOR PROOFS AND OVERLAYING.						
Megargee & De Cernea, Philadelphia, Pa.	Blue printing	24 by 38	25	.....	.....	1.125
Do.	Deep pink printing	24 by 38	25	.....	.....	1.125
A. G. Elliot & Co., Philadelphia, Pa.	White French folio	17 by 22	30	.....	.....	.80

No. 26.—Statement of contracts made for materials and supplies (except printing paper) during the fiscal year ended June 30, 1890.

Name of contractor.	Description of articles.	Quantity awarded.	Contract price.
	FIRST-CLASS LEDGER PAPER.		
Parsons Paper Company, Holyoke, Mass.....	Flat cap, 14 by 17 inches, 14 to 20 pounds	1,500	14.9 cents per pound.
Do	Demy, 16 by 21 inches, 24 to 29 pounds	1,500	14.9 cents per pound.
Mount Holly Paper Company, Mount Holly Springs, Pa ..	Medium, 18 by 23 inches, 28 to 38 pounds	1,000	14.3 cents per pound.
Do	Royal, 19 by 24 inches, 32 to 46 pounds	800	14.3 cents per pound.
L. L. Brown Paper Company, Adams, Mass	Superroyal, 20 by 28 inches, 45 to 57 pounds	400	20 cents per pound.
Do	Imperial, 23 by 31 inches, 75 pounds	200	20 cents per pound.
Parsons Paper Company, Holyoke, Mass	Double-demy, 21 by 32 inches, 75 pounds	200	19 cents per pound.
Mount Holly Paper Company, Mount Holly Springs, Pa...	Double-cap, 17 by 28 inches, 28 to 48 pounds	500	14.3 cents per pound.
L. L. Brown Paper Company, Adams, Mass	Any size and weight not enumerated above	500	20 cents per pound.
	SECOND-CLASS LEDGER PAPER.		
Dobler & Mudge, Baltimore, Md	Flat cap, 14 by 17 inches, 14 to 20 pounds	500	10.9 cents per pound.
M. Plummer & Co., New York, N. Y	Demy, 16 by 21 inches, 24 to 29 pounds	500	10.9 cents per pound.
Do	Medium, 18 by 23 inches, 28 to 38 pounds	300	10.9 cents per pound.
Dobler & Mudge, Baltimore, Md	Double-cap, 17 by 28 inches, 28 to 38 pounds	200	10.9 cents per pound.
Do	Double-demy, 21 by 32 inches, 48 to 75 pounds	200	11 cents per pound.
Do	Any size and weight not enumerated above	500	11 cents per pound.
Do	Tissue, S. and C., 21 by 23 inches	100	\$1.79 per ream.
	MANILLA, PLAID, AND MARBLE PAPERS.		
Dobler & Mudge, Baltimore, Md	Rope manilla, 24 by 36 inches, 50 pounds	100	\$3.75 per ream.
Do	Rope manilla, 27 by 38 inches, 100 pounds	100	\$8.52 per ream.
Do	Rope manilla, 36 by 40 inches, 100 pounds	50	\$7.50 per ream.
M. O. Raiguel & Co., Philadelphia, Pa	Pure bleached manilla, 40 by 48 inches, 300 pounds	50	\$17.75 per ream.
Dobler & Mudge, Baltimore, Md	Rope manilla of any size and weight not enumerated above	100	7.5 cents per pound.
Conrow Brothers, New York, N. Y	Blotting paper, 19 by 24 inches, 100 pounds	10	\$9 per ream.
Dobler & Mudge, Baltimore, Md	Hardware paper, 24 by 36 inches, 50 pounds	100	\$4 per ream.
Louis Dejonge & Co., New York, N. Y	Plaid paper, 22½ by 28 inches	30	\$6.50 per ream.
Do	Plaid paper, 23 by 31½ inches	25	\$7.50 per ream.

John Campbell & Co., New York, N. Y.	German wave medium, or double-cap marble paper	do.	100	\$5.90 per ream.
Louis Dejonge & Co., New York, N. Y.	German comb paper, 20 by 25 inches	do.	40	\$8.80 per ream.
Do	German double-cap comb paper	do.	40	\$8.80 per ream.
John Campbell & Co., New York, N. Y.	German comb paper, 22 by 28 inches	do.	20	\$9.75 per ream.
PAPERS FOR PROOFS AND OVERLAYING.				
Dobler & Mudge, Baltimore, Md	Blue printing paper, 24 by 38 inches, 25 pounds	do.	25	\$1.50 per ream.
Do	Deep pink printing paper, 24 by 38 inches, 25 pounds	do.	10	\$1.50 per ream.
M. O. Raiguel & Co., Philadelphia, Pa	French folio, 17 by 22 inches, 10 pounds	do.	30	80 cents per ream.
BINDERS' BOARDS.				
A. L. Henderson, Millburn, N. J	Binders' boards (No. 1 quality)	pounds	25, 000	3.2 cents per pound.
Do	Binders' boards (No. 2 quality)	do.	200, 000	2.3 cents per pound.
W. O. Davey & Sons, Jersey City, N. J	Davey's boards	do.	80, 000	4.7 cents per pound.
Debler & Mudge, Baltimore, Md	Straw board	do.	10, 000	2.5 cents per pound.
W. O. Davey & Sons, Jersey City, N. J	Truck board	do.	2, 500	5.9 cents per pound.
LEATHER.				
Thomas Garner & Co., New York, N. Y.	Cochineal English title	dozen	50	\$8.25 per dozen.
Louis Dejonge & Co., New York, N. Y.	Blue English title	do.	40	\$7.50 per dozen.
Thomas Garner & Co., New York, N. Y.	Green English title	do.	20	\$8.25 per dozen.
John Campbell & Co., New York, N. Y.	Turkey morocco (various colors)	do.	100	\$16.40 per dozen.
Do	Cochineal Turkey morocco	do.	50	\$16.40 per dozen.
Louis Dejonge & Co., New York, N. Y.	Levant Turkey morocco	do.	5	\$27.75 per dozen.
Do	Levant cochineal Turkey morocco	do.	3	\$29 per dozen.
Do	English calf (various colors)	do.	5	\$20 per dozen.
John Campbell & Co., New York, N. Y.	Blue straight-grained roan	do.	100	\$6.95 per dozen.
Thomas Garner & Co., New York, N. Y.	Cochineal straight-grained roan	do.	50	\$8 per dozen.
Do	Green straight-grained roan	do.	10	\$7.75 per dozen.
John Campbell & Co., New York, N. Y.	Maroon straight-grained roan	do.	10	\$7.50 per dozen.
Thomas Garner & Co., New York, N. Y.	Light-brown roan, calf finish	do.	10	\$9 per dozen.
John Campbell & Co., New York, N. Y.	Blue straight-grained skiver	do.	75	\$7.40 per dozen.
Do	Blue ungrained skiver	do.	50	\$7.40 per dozen.
Thomas Garner & Co., New York, N. Y.	Goat-skin parchment	do.	15	\$9 per dozen.
John Campbell & Co., New York, N. Y.	Virgin parchment	sheets	100	75 cents per sheet.

REPORT OF THE PUBLIC PRINTER.

Name of contractor.	Description of articles.	Quantity awarded.	Contract price.
LEATHER—continued.			
Thomas Garner & Co., New York, N. Y.	Law sheep, extra.....dozen..	2, 000	\$8.50 per dozen.
Do.....	Law sheep, No. 1.....do.....	400	\$7 per dozen.
Geo. Dudley & Son Co., West Winsted, Conn.	Bark skiver, medium.....do.....	200	\$7 per dozen.
John Campbell & Co., New York, N. Y.	Bark skiver, thin.....do.....	200	\$4.25 per dozen.
Thomas Garner & Co., New York, N. Y.	Fleshers.....do.....	600	\$3.50 per dozen.
Henry C. Howell, Newark, N. J.	Imitation Russia, whole skins.....feet..	20, 000	13 cents per foot.
Do.....	Imitation Russia, half skins, pebbled.....do.....	5, 000	14 cents per foot.
White, Son & Co., Boston, Mass.	Cowhide buffing, thick.....do.....	5, 000	7 cents per foot.
Do.....	Cowhide buffing, thin.....do.....	5, 000	5 cents per foot.
BOOK CLOTH.			
Interlaken Mills, Providence, R. I.	Black.....pieces..	5, 000	\$4.25 per piece.
Do.....	Common colors.....do.....	100	\$5.00 per piece.
Louis Dejonge & Co., New York, N. Y.	Extra brown.....do.....	150	\$5.85 per piece.
Do.....	Extra green.....do.....	150	\$6.22 per piece.
Do.....	Extra blue.....do.....	150	\$6.22 per piece.
Do.....	Ruby, solferino, and magenta.....do.....	80	\$6.95 per piece.
Do.....	Cochineal.....do.....	100	\$6.35 per piece.
Do.....	Dove colored.....do.....	300	\$5.96 per piece.
Do.....	Any shade or color.....do.....	100	\$5.85 per piece.
RULING PENS.			
John Campbell & Co., New York, N. Y.	Faint-line, letter C.....points..	6, 000	1.4 cents per point.
Do.....	Single down-line, triple backs.....do.....	400	1.8 cents per point.
Do.....	Double down-line, triple backs.....do.....	400	1.8 cents per point.
Do.....	Long double, to go in clamp, triple backs.....do.....	200	2.5 cents per point.
Do.....	Long single, to go in clamp, triple backs.....do.....	200	2.5 cents per point.

SILK HEAD-BAND.		
J. L. Shoemaker & Co., Philadelphia, Pa	Silk head-band, No. 2	75 32 cents per piece.
John Campbell & Co., New York, N. Y	Silk head-band, No. 3	75 49 cents per piece.
Do	Silk head-band, No. 4	75 53 cents per piece.
Do	Silk head-band, No. 5	50 62 cents per piece.
Do	Silk head-band, No. 7	100 70 cents per piece.
Do	Silk head-band, No. 9	50 78 cents per piece.
Do	Silk head-band, No. 11	16 95 cents per piece.
GOLD LEAF.		
Hastings & Co., Philadelphia, Pa	Gold leaf XX	1,500 \$6.43 per pack.
Do	Gold leaf, usual	500 \$5.60 per pack.
Geo. Meier & Co., New York, N. Y	Imitation gold leaf	800 \$1.18 per pack.
THREAD, TWINE, ETC.		
John Campbell & Co., New York, N. Y	Hayes's thread, No. 16, 3-cord	500 78 cents per pound.
Do	Hayes's thread, No. 16, 4-cord	300 78 cents per pound.
Rowland A. Robbins, New York, N. Y	American thread, No. 16	300 66 cents per pound.
Rider & Addison, Washington, D. C.	American thread, No. 20	300 74.5 cents per pound.
Do	American thread, No. 30	300 84 cents per pound.
Rowland A. Robbins, New York, N. Y	American thread, No. 35	200 \$1.01 per pound.
Detre & Blackburn, Philadelphia, Pa	No. 30, 2-cord thread	100 81 cents per pound.
Do	No. 35, 3-cord gilling thread, gray	2,500 72 cents per pound.
John Campbell & Co., New York, N. Y	No. 45, 3-cord thread, gray	100 \$1.10 per pound.
Miller-Megee Co., Philadelphia, Pa	Thread for Smyth book-sewing machines, on spools	600 \$1.50 per dozen.
Detre & Blackburn, Philadelphia, Pa	Rope for pressing machines	100 9.4 cents per pound.
Rowland A. Robbins, New York, N. Y	Cotton wrapping cord	500 18 cents per pound.
Do	Page cord	200 20.4 cents per pound.
Rider & Addison, Washington, D. C.	Heavy twine	5,000 10 cents per pound.
John Campbell & Co., New York, N. Y	Soft twine, 3, 5, 6, or 12 ply	4,500 29 cents per pound.
Rider & Addison, Washington, D. C.	Twine	3,000 12.5 cents per pound.
WIRE FOR SEWING AND STITCHING MACHINES.		
E. P. Donnell Manufacturing Company, Chicago, Ill.	Tinned wire, No. 24	500 15 cents per pound.
Do	Tinned wire, No. 26	500 15 cents per pound.

REPORT OF THE PUBLIC PRINTER.

Name of contractor.	Description of articles.	Quantity awarded.	Contract price.
	WIRE FOR SEWING AND STITCHING MACHINES—continued.		
E. P. Donnell Manufacturing Company, Chicago, Ill.....	No. 20 wire.....pounds..	200	18 cents per pound.
Do.....	No. 30 round wire.....do....	500	15 cents per pound.
Do.....	No. 60 flat wire.....do....	500	18 cents per pound.
Do.....	No. 10 flat wire.....do....	500	18 cents per pound.
Do.....	No. 20 flat wire.....do....	500	18 cents per pound.
	STEREOTYPERS' MATERIAL.		
G. D. Mackey, New York, N. Y.....	Stereotype metal.....pounds..	10, 000	6.2 cents per pound.
Robert Boyd, Washington, D. C.....	Sulphate of copper.....do....	1, 000	6.5 cents per pound.
D. Connell, Washington, D. C.....	Calcined plaster of Paris.....barrels..	40	\$1.69 per barrel.
Do.....	Potter's clay.....do....	50	\$1.55 per barrel.
Z. D. Gilman, Washington, D. C.....	Kaolin.....pounds..	2, 000	1.7 cents per pound.
P. E. Cowman, Baltimore, Md.....	Baywood blocking board.....feet..	2, 000	15 cents per foot.
G. D. Mackey, New York, N. Y.....	Copper battery plates.....pounds..	1, 500	17 cents per pound.
Do.....	Sifted iron filings.....do....	1, 000	3.5 cents per pound.
New York Smelting and Refining Company, New York, N. Y.	Bar tin.....do....	5, 000	20.9 cents per pound.
G. D. Mackey, New York, N. Y.....	Tin foil.....do....	500	18.5 cents per pound.
Do.....	Bar lead.....do....	25, 000	4 cents per pound.
James M. Lyon, New York, N. Y.....	Stereotype backing paper, 19 by 24 inches, 40 pounds.....reams..	10	\$5.60 per ream.
Do.....	Stereotype backing paper, 19 by 24 inches, 50 pounds.....do....	10	\$7 per ream.
B. & O. Myers, New York, N. Y.....	White tissue paper, No. 1, 19 by 24 inches.....do....	40	\$1.80 per ream.
Do.....	Extra cream tissue paper, No. 1, 19 by 24 inches.....do....	50	\$2.30 per ream.
Dobler & Mudge, Baltimore, Md.....	Blue and white bonnet board, 17½ by 23½ inches.....sheets..	4, 000	3 cents per sheet.
S. Stroock & Co., New York, N. Y.....	Russian hair felt blankets, 54 by 86 inches, ¼-inch thick.....do....	6	\$10 per sheet.
Do.....	Russian hair felt blankets, 44 by 53 inches, ¼-inch thick.....do....	6	\$5 per sheet.
Z. D. Gilman, Washington, D. C.....	Sulphuric acid.....carboys..	3	\$4.50 per carboy.
Do.....	Muriatic acid.....do....	3	\$3.75 per carboy.
E. F. C. Young, receiver, Jersey City, N. J.....	Plumbago.....pounds..	1, 000	30.6 cents per pound.

DRY GOODS, ETC.

William F. Bernstien, Philadelphia, Pa.....	Heavy crash, 31 inches wide.....yards..	3,000	9.9 cents per yard.
Wire Book Sewing-Machine Co., Limited, Philadelphia, Pa.....	Thin crash, 31 inches wide.....do.....	3,000	8 cents per yard.
Woodward & Lothrop, Washington, D. C.....	Blankets.....pairs..	20	\$4.58 per pair.
Do.....	Crash for toweling.....yards..	1,000	9.6 cents per yard.
William F. Bernstien, Philadelphia, Pa.....	Canvas for covering blank books.....do.....	1,000	25.7 cents per yard.
Do.....	Unbleached cotton, 27 inches wide.....do.....	800	4.4 cents per yard.
Do.....	Bleached cotton, yard wide.....do.....	500	5.7 cents per yard.
Do.....	Unbleached cotton, yard wide.....do.....	500	4.7 cents per yard.
Do.....	Bleached cotton, 10-4 wide.....do.....	200	22.8 cents per yard.
Do.....	Bleached cotton, 42 inches wide.....do.....	3,000	9 cents per yard.
Do.....	Unbleached cotton, 45 inches wide.....do.....	1,000	12.3 cents per yard.
Woodward & Lothrop, Washington, D. C.....	Unbleached cotton, 50 or 52 inches wide.....do.....	1,000	13.62 cents per yard.
William F. Bernstien, Philadelphia, Pa.....	Paper cambric, white.....do.....	600	5.3 cents per yard.
Louis Dejonge & Co., New York, N. Y.....	Gray super.....do.....	4,000	3.2 cents per yard.
Woodward & Lothrop, Washington, D. C.....	Alpaca braid.....do.....	1,500	1.5 cents per yard.
Do.....	Silk braid.....pieces..	300	74 cents per piece.
Z. D. Gilman, Washington, D. C.....	Jewelers' cotton.....pounds..	50	43 cents per pound.

PAINTS, OILS, ETC.

Armour & Co., Chicago, Ill.....	Glue.....pounds..	10,000	11.1 cents per pound.
Nicolai Brothers, Washington, D. C.....	Benzine.....gallons..	3,000	7.3 cents per gallon.
Jas. L. Barbour & Son, Washington, D. C.....	Alcohol, 95°.....do.....	150	\$2.22 per gallon.
Otto Chemical Co., Williamsport, Pa.....	Wood alcohol.....do.....	1,200	\$1.03 per gallon.
W. H. Butler, Washington, D. C.....	Linseed oil.....do.....	100	61 cents per gallon.
Do.....	Boiled linseed oil.....do.....	25	63 cents per gallon.
Do.....	White lead.....pounds..	1,000	6.4 cents per pound.
Robt. Boyd, Washington, D. C.....	Lubricating compound No. 2.....do.....	100	16.3 cents per pound.
George Rynel, jr., Washington, D. C.....	Wax tapers.....dozens..	12	\$1 per dozen.
D. Connell, Washington, D. C.....	Sweet oil.....do.....	30	60 cents per dozen.
Jas. L. Barbour & Son, Washington, D. C.....	Virgin olive oil.....dozen quarts..	3	59 cents per quart.
Louis Dejonge & Co., New York, N. Y.....	French book varnish.....dozen..	10	\$14 per dozen.
E. G. Wheeler, Washington, D. C.....	Beef tallow.....pounds..	300	5.6 cents per pound.
H. Kohnstamm & Co., New York, N. Y.....	White shellac.....do.....	100	28 cents per pound.

REPORT OF THE PUBLIC PRINTER.

Name of contractor.	Description of articles.	Quantity awarded.	Contract price.
PAINTS, OILS, ETC.—continued.			
George Ryneal, jr., Washington, D. C.	Orange shellac.....pounds..	100	24 cents per pound.
W. H. Butler, Washington, D. C.	Ultramarine blue.....do.....	56	15 cents per pound.
Z. D. Gilman, Washington, D. C.	Pulverized alum.....do.....	300	3 cents per pound.
George Ryneal, jr., Washington, D. C.	Crome yellow, D. O.....do.....	72	13.5 cents per pound.
Do.....	Crome yellow.....do.....	72	13.5 cents per pound.
Z. D. Gilman, Washington, D. C.	Soluble blue.....do.....	50	56 cents per pound.
George Ryneal, jr., Washington, D. C.	Carmine, No. 40.....ounces..	100	29.5 cents per ounce.
Do.....	Red lake, marblers' colors.....pounds..	150	31.9 cents per pound.
Z. D. Gilman, Washington, D. C.	Crude turpentine.....do.....	200	4 cents per pound.
George Ryneal, jr., Washington, D. C.	Glass, No. 1, single thick, 10 by 12 inches.....boxes..	2	\$1.89 per box.
Francis Miller, Washington, D. C.	Glass, No. 1, single thick, 12 by 14 inches.....do.....	2	\$2.10 per box.
Do.....	Glass, No. 1, single thick, 12 by 15 inches.....boxes..	10	\$2.10 per box.
Do.....	Glass, No. 1, single thick, 12 by 18 inches.....do.....	10	\$2.10 per box.
Do.....	Glass, No. 1, single e thick, 12 by 20 inches.....do.....	10	\$2.10 per box.
DRUGGISTS' SUNDRIES.			
Z. D. Gilman, Washington, D. C.	Egg albumen.....pounds..	150	73 cents per pound.
Do.....	Blood albumen.....do.....	100	21.5 cents per pound.
Do.....	Potash.....do.....	2,500	5.1 cents per pound.
Do.....	Detergent.....do.....	1,500	4.9 cents per pound.
Do.....	Florida sponge, medium.....do.....	25	\$2.15 per pound.
Do.....	Florida sponge, small.....do.....	25	\$1.70 per pound.
Do.....	Venetian formes sponge.....do.....	10	\$2.15 per pound.
G. D. Mackey, New York, N. Y.	Beeswax.....do.....	1,000	30 cents per pound.
Z. D. Gilman, Washington, D. C.	Granulated gum arabic.....do.....	100	83 cents per pound.
H. Kohnstamm & Co., New York, N. Y.	Gum arabic sorts.....do.....	50	45 cents per pound.
Z. D. Gilman, Washington, D. C.	Gum hog.....do.....	250	43 cents per pound.
H. Kohnstamm & Co., New York, N. Y.	Eosine.....do.....	5	\$2.50 per pound.
Do.....	Powdered borax.....do.....	100	10 cents per pound.

Z. D. Gilman, Washington, D. C.	Oxalic acid.....do.....	100	11.8 cents per pound.
Do	Creosote	20	50 cents per pound.
Do	Stronger water ammonia	100	10 cents per pound.
H. Kohnstamm & Co., New York, N. Y.	Pearlash	100	8 cents per pound.
Z. D. Gilman, Washington, D. C.	Dextrine	200	7 cents per pound.
STATIONERY.			
Detre & Blackburn, Philadelphia, Pa.	Pencils, round, Faber's	32	\$4.09.5 per gross.
Do	Pencils, hexagon, Faber's	32	\$5.64.5 per gross.
Do	Pencils, red, Faber's	6	\$7.19.9 per gross.
Do	Pencils, blue, Faber's	6	\$6.29.9 per gross.
Do	Pencils, green, Faber's	6	\$6.29.9 per gross.
Do	Pencils, "M," hexagon, Dixon's	32	\$4.60 per gross.
Do	Pencils, "S. M.," hexagon, Dixon's	32	\$4.60 per gross.
Do	Pencils, red, Dixon's	6	\$5.72 per gross.
Do	Pencils, blue, Dixon's	6	\$5.72 per gross.
Do	Pencils, green, Dixon's	6	\$5.72 per gross.
William F. Bernstein, Philadelphia, Pa.	Pencils, black lumber, Dixon's	4	\$4.50 per gross.
Rowland A. Robbins, New York, N. Y.	Pencils, red or blue lumber, Dixon's	4	\$6.24 per gross.
Detre & Blackburn, Philadelphia, Pa.	Pencils, hexagon, Eagle	32	\$3.83 per gross.
Do	Pencils, round, Eagle	32	\$2.83 per gross.
Do	Pencils, blue, red, and green, Eagle	18	\$3.83 per gross.
William F. Bernstein, Philadelphia, Pa.	Penholders, crown, Eagle No. 1	24	26.8 cents per dozen.
Do	Penholders, crown, Eagle No. 2	24	29.6 cents per dozen.
Do	Penholders, crown, Eagle No. 3	24	32.6 cents per dozen.
Do	Ink and pencil erasers, Eagle, small	12	58.1 cents per dozen.
Do	Ink and pencil erasers, Eagle, medium	12	79.9 cents per dozen.
E. Morrison, Washington, D. C.	Ink and pencil erasers, Eagle, large	12	\$1.15 per dozen.
Do	Rubber erasers, Eagle, 12 to pound	10	55 cents per pound.
William F. Bernstein, Philadelphia, Pa.	Penholders, No. 2410	2	\$1.29 per gross.
E. Morrison, Washington, D. C.	Penholders, No. 3411	2	\$1.50 per gross.
Do	Penholders, No. 4712	2	\$1.68 per gross.
William Ballantyne & Son, Washington, D. C.	Erasive rubbers, Davidson's velvet, No. 12	10	83 cents per pound.
Do	Paper fasteners, McGill's round head, No. 1	24	23½ cents per box.
Do	Paper fasteners, McGill's round head, No. 2	24	23½ cents per box.

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Name of contractor.	Description of articles.	Quantity awarded.	Contract price.
STATIONERY—continued.			
Detre & Blackburn, Philadelphia, Pa.....	Ink, Underwood's Egyptian black.....	24	35.9 cents per quart.
E. Morrison, Washington, D. C.....	Ink, Underwood's chemical writing.....	24	50 cents per quart.
Do.....	Ink, Underwood's carmine.....	12	\$1.50 per quart.
Detre & Blackburn, Philadelphia, Pa.....	Writing fluid, Arnold's.....	24	35 cents per quart.
William Ballantyne & Son, Washington, D. C.....	Ink, Thomas's black.....	24	34 cents per quart.
Easton & Rupp, Washington, D. C.....	Ink, Maynard & Noyes's black.....	24	30 cents per quart.
William Ballantyne & Son, Washington, D. C.....	Ink, Freeman's.....	24	48 cents per quart.
Do.....	Ink, French copying.....	12	39 cents per quart.
Easton & Rupp, Washington, D. C.....	Writing and copying fluid, Sandford's combined.....	12	40 cents per quart.
Detre & Blackburn, Philadelphia, Pa.....	Rubber bands, No. 33, $\frac{3}{8}$ -inch, Faber's.....	24	39 cents per gross.
Do.....	Rubber bands, assorted sizes, Faber's.....	24	33 cents per gross.
Do.....	Rubber bands, No. 0, $\frac{1}{4}$ -inch, Faber's.....	24	39 cents per gross.
Do.....	Rubber bands, No. 0, $\frac{1}{2}$ -inch, Faber's.....	24	79 cents per gross.
Do.....	Rubber bands, No. 000, $\frac{1}{4}$ -inch, Faber's.....	6	59 cents per gross.
Do.....	Rubber bands, No. 17, Faber's.....	24	12.4 cents per gross.
Do.....	Rubber bands, No. 10, Faber's.....	24	6.7 cents per gross.
Easton & Rupp, Washington, D. C.....	Envelopes, No. 5, white $3\frac{1}{8}$ by $5\frac{1}{2}$ inches.....	1,000	\$1.55 per thousand.
Do.....	Envelopes, No. 6, white, $3\frac{5}{8}$ by 6 inches.....	20,000	\$1.70 per thousand.
Do.....	Envelopes, No. 9, white, $3\frac{1}{2}$ by $8\frac{3}{8}$ inches.....	10,000	\$2.78 per thousand.
Do.....	Envelopes, No. 10, white, 4 by $9\frac{1}{2}$ inches.....	10,000	\$3.08 per thousand.
William Ballantyne & Son, Washington, D. C.....	Ink eraser and paper cleaner, No. 12.....	2	\$13.50 per gross.
Do.....	Envelopes, manilla, $9\frac{1}{2}$ by $12\frac{1}{2}$ inches.....	5,000	\$7.60 per thousand.
Do.....	Envelopes, manilla, $7\frac{1}{2}$ by $11\frac{1}{2}$ inches.....	3,000	\$5.30 per thousand.
Do.....	Envelopes, manilla, 7 by $10\frac{1}{2}$ inches.....	3,000	\$4.94 per thousand.
Do.....	Envelopes, manilla, $6\frac{1}{2}$ by 10 inches.....	5,000	\$4.42 per thousand.
Do.....	Coin envelopes, rope manilla, $3\frac{3}{4}$ by 5 $\frac{1}{4}$ inches.....	50,000	\$1.75 per thousand.
Do.....	Tracing linen, yard wide.....	96	22 cents per yard.
William F. Bernstein, Philadelphia, Pa.....	Bone folders, large.....	10	\$1.23 per dozen.

BRUSHES.

F. P. May & Co., Washington, D. C.	10	\$1.90 per dozen.
Z. D. Gilman, Washington, D. C.	10	\$5.95 per dozen.
Robert Boyd, Washington, D. C.	10	\$10.25 per dozen.
Do.	10	\$29.60 per dozen.
Do.	4	\$3.90 per dozen.
Z. D. Gilman, Washington, D. C.	15	\$4.10 per dozen.
Robert Boyd, Washington, D. C.	6	\$11.90 per dozen.
F. P. May & Co., Washington, D. C.	10	70 cents per dozen.
Do.	10	\$2.35 per dozen.

BELTING.

E. J. Brooks & Co., New York, N. Y.	200	4 cents per foot.
Do.	100	6.8 cents per foot.
Do.	400	9.2 cents per foot.
Do.	100	12 cents per foot.
Do.	500	14.4 cents per foot.
Do.	100	17.2 cents per foot.
Do.	100	34.4 cents per foot.
Do.	100	20 cents per foot.
Do.	100	40 cents per foot.
Do.	100	30.4 cents per foot.
Do.	100	60.8 cents per foot.
Do.	100	40.8 cents per foot.
Do.	100	81.6 cents per foot.
Do.	100	51.6 cents per foot.
Do.	100	\$1.032 per foot.
Do.	100	\$1.24 per foot.

COAL.

Stephenson & Brother, Washington, D. C.	1,500	\$2.93 per ton.
William E. Hodge, Washington, D. C.	(*)	\$4.45 per ton.

* Such quantity as may be required.

No. 26.—Statement of contracts made for materials and supplies (except printing paper) during the fiscal year ended June 30, 1890—Continued.

Name of contractor.	Description of articles.	Quantity awarded.	Contract price.
Smith Transparent Ice Manufacturing Company, Washington, D. C.	ICE. Kennebec ice	400, 000	36 cents per 100 pounds.
Miller-Megee Company, Philadelphia, Pa.	MISCELLANEOUS. Guards for Philadelphia patent backs	10, 000	5 cents per guard.
Bingham, Daley & O'Harra, New York, N. Y.	Tablet composition	500	22 cents per pound.
J. L. Shoemaker & Co., Philadelphia, Pa.	Parchment substitute, 8-inch	100	62 cents per piece.
Z. D. Gilman, Washington, D. C.	Emery	1, 000	5½ cents per pound.
Robt. Boyd, Washington D. C.	Emery cloth, No. 0	20	48 cents per quire.
Do	Emery cloth, No. 1	20	48 cents per quire.
D. Connell, Washington, D. C.	Family flour	75	\$4.42 per barrel.
Jas. L. Barbour & Son, Washington, D. C.	Vinegar, white wine	50	13 cents per gallon.
Christopher Lipps, Baltimore, Md.	Soap	10, 000	4.5 cents per pound.
F. P. May & Co., Washington, D. C.	Brooms, No. 7	36	\$2.40 per dozen.
M. & P. Metzger, Washington, D. C.	Brooms, No. 8	24	\$2.90 per dozen.
Jas. L. Barbour & Son, Washington, D. C.	Buckets, painted	10	\$1.47 per dozen.
D. Connell, Washington, D. C.	Buckets, cedar	4	\$1.45 per dozen.
James M. Hickerson, Strasburgh, Va.	Earthen crocks, 1-gallon	20	\$1.25 per dozen.
Robt. Boyd, Washington, D. C.	Spring dividers, 5-inch	6	\$3.12 per dozen.
Do	Wing dividers, 10-inch	6	\$2.39 per dozen.
Do	Bookbinder's hammers	6	\$13.50 per dozen.
F. P. May & Co., Washington, D. C.	Bookbinder's awls, with handles	10	\$2.80 per dozen.
J. L. Shoemaker & Co., Philadelphia, Pa.	Shoe knives	50	80 cents per dozen.
Woodward & Lothrop, Washington, D. C.	Straight trimmers, 10-inch	10	\$6.99 per dozen.
D. Connell, Washington, D. C.	Sawdust	450	15 cents per barrel.
Harry M. Schneider, Washington, D. C.	Cotton waste, XXX	5, 000	8.8 cents per pound.
F. P. May & Co., Washington, D. C.	Mallets, lignum-vitæ, 10-inch	24	\$2.40 per dozen.
R. C. M. Burton, Washington, D. C.	Window awnings	50	\$2.50 per awning.
Do	Recovering window-awning frames	(*)	\$2 per awning.

M. A. Weaver, Washington, D. C.....	Washing towels.....	(*)	48.8 cents per 100 towels.
New York Smelting and Refining Company, New York, N. Y.	Antimony and tin.....	(*)	16.45 cents per pound.
William F. Bernstein, Philadelphia, Pa	White tape.....yards..	45,000	31½ cents per 144 yards.
FORAGE, JULY 1 TO DECEMBER 31, 1889.			
Myers & Loving, Washington, D. C.....	Oats	(*)	\$1.15½ per 100 pounds.
Do.....	Corn meal	(*)	\$1 per 100 pounds.
Do.....	Bran	(*)	75 cents per 100 pounds.
Do.....	Corn	(*)	70 cents per 100 pounds.
Do.....	Hay	(*)	75 cents per 100 pounds.
Do.....	Straw	(*)	64½ cents per 100 pounds.
Do.....	Oil meal.....	(*)	\$3 per 100 pounds.
FORAGE, JANUARY 1 TO JUNE 30, 1890.			
Walter F. Hewett, Washington, D. C.....	Oats	(*)	\$1.05 per 100 pounds.
Do.....	Corn meal	(*)	70 cents per 100 pounds.
Do.....	Bran	(*)	70 cents per 100 pounds.
Do.....	Corn	(*)	60 cents per 100 pounds.
Do.....	Hay	(*)	77 cents per 100 pounds.
Do.....	Straw	(*)	85 cents per 100 pounds.
Do.....	Oil meal.....	(*)	\$4 per 100 pounds.

* Such quantity as may be required.

REPORT OF THE PUBLIC PRINTER.

Name of contractor.	Title of document.	Number of illustrations.	Number of printed copies each.	Number of engraved plates.	Amount of contract.
Bell Brothers, Washington, D. C.	Annual Report of the Secretary of the Navy for 1889.	44	8,484	.....	\$735.00
Julius Bein & Co., New York, N. Y.	do	8	7,484	.....	134.00
Do.	United States Coast and Geodetic Survey, Report for 1888	1	13,568	.....	775.00
Do.	Senate Mis. Doc. No. 92, 2d session, 49th Congress.	50	6,784	.....	638.00
Do.	House Ex. Doc. No. 106, 1st session, 51st Congress.	12	6,748	.....	1,389.00
Bookhart Brothers, New York, Y. Y.	Tenth Annual Report of the Director of the U. S. Geological Survey.	14	1,984	.....	410.00
Forbes Lithographic Manufacturing Company, Boston, Mass.	do	.....	.....	139	1,541.37
Do.	do	11	9,500	.....	973.50
Do.	do	11	6,000	.....	898.00
Do.	House Ex. Doc. No. 264, part 2, 1st session, 51st Congress.	11	5,534	.....	2,292.81
Isaac Friedenwald, Baltimore, Md.	Annual Report of the Secretary of the Navy for 1889.	26	2,109	.....	139.50
Do.	do	24	7,134	.....	18.25
George S. Harris, Philadelphia, Pa.	Vol. 3 of the Final Reports of the Geological and Geographical Survey of the Territories.	.....	.....	2	7,580.00
Do.	Annual Report of the Secretary of Agriculture for 1889.	134	1,900	.....	11,083.00
Do.	Annual Report of Chief of Engineers for 1889.	13	405,734	.....	1,588.79
Do.	do	10	6,874	.....	.....
Do.	do	27	6,899	.....	.....
Do.	do	40	6,924	.....	.....
Do.	do	21	6,949	.....	.....
Do.	do	3	6,999	.....	.....
Do.	do	28	7,024	.....	.....
A. R. Hart, New York, N. Y.	Fourth and Fifth Annual Reports of Bureau of Animal Industry.	.....	.....	2	4.50
A. Hoen & Co., Baltimore, Md.	House Mis. Doc. No. 134, 2d session, 50th Congress	20	5,059	.....	548.00
Maurice Joyce, Washington, D. C.	Annual Report of the Secretary of Agriculture for 1889.	.....	.....	14	32.00

Moss Engraving Company, New York, N. Y.....	Annual Report of the Secretary of the Navy for 1889.....	.....	.....	6	68.00
Do.....	do.....	.....	.....	30	356.00
Do.....	House Mis. Doc. No. 134, 2d session, 50th Congress.....	.....	.....	4	56.00
Do.....	Bulletin No. 62, United States Geological Survey.....	.....	.....	34	93.00
Do.....	Senate Mis. Doc. No. 92, 2d session, 49th Congress.....	.....	.....	42	212.00
Do.....	do.....	.....	.....	21	232.00
New York Engraving and Printing Company, New York, N. Y.....	Tenth Annual Report of Directors of U. S. Geological Survey.....	.....	.....	59	77.50
Do.....	do.....	.....	.....	100	465.00
Do.....	United States Coast and Geodetic Survey, Report for 1888.....	.....	.....	9	92.00
Do.....	Annual Report of the Secretary of Agriculture for 1889.....	.....	.....	6	210.00
Do.....	Annual Report of Chief of Engineers for 1889.....	9	7,074	.....	875.00
Do.....	do.....	.....	.....	22	198.00
Do.....	do.....	.....	.....	7	17.50
Estate of Norris Peters, Washington, D. C.....	do.....	29	6,874	.....	700.00
Do.....	Senate Mis. Doc. No. 92, 2d session, 49th Congress.....	23	6,899	.....	250.00
The Norris Peters Company, Washington, D. C.....	Annual Report of the Secretary of the Navy for 1889.....	7	6,924	.....	613.00
Sackett and Wilhelms Lithographic Company, New York.....	Annual Report of the Secretary of Agriculture for 1889.....	11	7,099	.....	6,956.00
Do.....	do.....	4	6,784	.....	250.00
Do.....	Senate Mis. Doc. No. 92, 2d session, 49th Congress.....	17	7,484	.....	613.00
The Norris Peters Company, Washington, D. C.....	Annual Report of the Secretary of the Navy for 1889.....	9	405,734	.....	6,956.00
Sackett and Wilhelms Lithographic Company, New York.....	Bulletin No. 62, United States Geological Survey.....	11	4,784	.....	635.00
Do.....	Tenth Annual Report of Director of U. S. Geological Survey.....	15	15,500	.....	2,975.00
Do.....	do.....	15	5,534	.....	2,025.00
Do.....	Fourth and Fifth Annual Reports of Bureau of Animal Industry.....	25	51,784	.....	2,690.00

No. 28.—Statement showing number of presses in the Government Printing Office June 30, 1890, and their condition.

Name.	Size of bed.	Condition.	No. of presses.
PRESS-ROOM, MAIN OFFICE.			
Bullock web.....		Good.....	1
Do.....		do.....	1
Hoe web.....		do.....	1
Hoe cylinder.....	26 by 34.....	do.....	1
Do.....	26 by 34.....	Bad.....	1
Do.....	28½ by 33½.....	do.....	1
Do.....	29 by 42.....	Good.....	1
Do.....	29 by 42.....	Bad.....	1
Do.....	29 by 42.....	Good.....	1
Do.....	29 by 41¾.....	do.....	1
Do.....	29 by 41¾.....	Worn-out.....	1
Do.....	43 by 56.....	Good.....	1
Do.....	43 by 56.....	do.....	1
Do.....	38 by 54¾.....	do.....	1
Do.....	43½ by 56.....	do.....	1
Do.....	43½ by 56.....	do.....	1
Do.....	29½ by 42.....	do.....	1
Do.....	29½ by 42.....	do.....	1
Do.....	29½ by 42.....	do.....	1
Do.....	19½ by 25.....	do.....	1
Do.....	17 by 21.....	do.....	1
Do.....	17 by 21.....	do.....	1
Do.....	17 by 21.....	Fair.....	1
Huber.....	41 by 51½.....	Good.....	1
Potter cylinder.....	40 by 54.....	Worn-out.....	1
Do.....	32 by 46.....	New.....	2
Do.....	29½ by 41½.....	Good.....	1
Do.....	26 by 34¾.....	do.....	1
Do.....	40 by 53¾.....	do.....	1
Do.....	46 by 53¾.....	Fair.....	1
Do.....	40 by 53¾.....	do.....	1
Do.....	40 by 53¾.....	Good.....	1
Cottrell cylinder.....	26 by 35.....	Bad.....	1
Do.....	29 by 42.....	Good.....	1
Do.....	29 by 42.....	Fair.....	1
Do.....	29 by 42.....	do.....	1
Do.....	29 by 42.....	do.....	1
Do.....	29 by 42.....	do.....	1
Do.....	29 by 42.....	Good.....	1
Do.....	29 by 42.....	do.....	1
Do.....	24 by 34¾.....	do.....	1
Do.....	29½ by 41¾.....	Bad.....	1
Do.....	29 by 41½.....	do.....	1
Do.....	42 by 55½.....	Worn-out.....	1
Do.....	42 by 55½.....	do.....	1
Do.....	42 by 55½.....	do.....	1
Do.....	25 by 35.....	do.....	1
Do.....	25 by 35.....	Bad.....	1
Do.....	29 by 41¾.....	do.....	1
Do.....	29 by 41¾.....	do.....	1
Do.....	29 by 41¾.....	do.....	1
Do.....	29 by 41¾.....	do.....	1
Do.....	20 by 25.....	Fair.....	1

No. 28.—Statement showing number of presses in the Government Printing Office June 30, 1890, and their condition—Continued.

Name.	Size of bed.	Condition.	No. of presses.
PRESS ROOM, MAIN OFFICE—continued.			
Cottrell cylinder	20 by 25.....	Fair	1
Do	20 by 25.....	Bad	1
Do	18 by 22.....	Fair	1
Do	18 by 22.....	do	1
Do	18 by 22.....	Bad	1
Do	25 by 39 $\frac{3}{4}$	Good	1
Cottrell cylinder (for cut-work).....	31 by 42.....	do	1
Do	31 by 42.....	do	1
Scott cylinder.....	29 by 41 $\frac{1}{2}$	do	1
Allen	7 $\frac{1}{2}$ by 14	Bad	1
Liberty	10 by 15	do	1
Cottrell cylinder.....	25 by 35	Good	1
Gordon	14 $\frac{1}{2}$ by 21 $\frac{1}{2}$	New	2
Total			68
PRESS-ROOM, TREASURY BRANCH.			
Cottrell cylinder.....	Double medium.....	Good	3
Hoe cylinder.....	do	Worn-out	1
Potter cylinder	Superroyal.....	Good	1
Do	Double medium.....	do	1
Cottrell cylinder.....	Cap	do	1
Scott cylinder.....	Medium.....	do	1
Gordon	10 by 14 inside chase.....	do	1
Total			9
PRESS ROOM, INTERIOR BRANCH.			
Scott cylinder, No. 4	26 by 34	Good	1
Potter cylinder, No. 2	25 by 35	New	1
Peerless	Quarto medium, 11 by 13	Good	1
Gordon	Eighth medium, 8 by 12	do	1
Washington hand press	Cap	do	1
Total			5
PRESS-ROOM, NAVY BRANCH.			
Scott cylinder, No. 5	Double medium.....	Good	1
Hoe cylinder.....	21 $\frac{1}{4}$ by 23 $\frac{1}{2}$	Worn-out	1
Gordon	Half medium.....	do	1
Do	Quarto medium.....	do	1
Total			4
PRESS-ROOM, STATE BRANCH.			
Gordon job.....	Quarto medium.....	Good	1
Hoe cylinder	Superroyal.....	Bad	1
Total			2
Grand total.....			88

RECAPITULATION.

New	5
In good condition.....	46
In fair condition.....	11
In bad condition	16
Worn-out.....	10
Total	88

No. 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year ended June 30, 1890, with the length of time each has been employed and the amount each has received.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK.				TIME WORK—cont'd.			
H. T. Brian.....		365	\$2,100.00	John F. Hurley.....	2,321		\$928.40
J. M. A. Spottswood.....		313	1,799.75	E. C. Brown.....	455½		192.20
Wm. Barnum.....		301	1,730.75	Geo. Saunders.....	229½		91.80
Joseph Dierken.....	3,100		1,550.00	E. S. Wiler.....	2,527		1,010.80
John Tillinghast.....	890		445.00	E. N. Lancaster.....	708		283.20
W. S. Baker.....	2,437		1,291.68	P. A. Ermentrout.....	1,758½		703.40
Jos. A. Arnold.....	2,337		1,238.48	W. E. Young.....	2,121		848.40
John R. Berg.....	2,336		1,238.06	D. R. Johnson.....	2,539		1,015.60
A. F. Bloomer.....	2,280		1,506.70	H. S. Sutton.....	2,712½		1,085.00
Henry N. Boernstein.....	2,311½		1,225.07	John O'Neill.....	2,148		859.20
Geo. Burklin.....	2,430½		1,288.14	A. H. Potts.....	2,281½		912.60
T. A. Bynum.....	1,353		717.07	E. W. Patton.....	109		43.60
A. T. Cavis.....	2,329½		1,234.61	McK. Jarvis.....	400		160.00
Frank E. Chapin.....		290	1,229.60	Titus F. Ellis.....	2,211½		884.60
H. A. Coolidge.....	2,517½		1,334.27	S. McL. Byington.....	168		67.20
C. A. Edelen.....	2,490		1,296.11	Daniel McCallum.....	592½		237.00
W. J. Frizzell.....	585½		310.31	W. R. Burgess.....	2,851		1,140.40
Isaac Fuller.....	2,151½		1,140.25	J. C. Sowers.....	500		200.00
W. C. Henry.....		312	1,322.88	Chas. A. Capell.....	1,542½		617.00
O. F. Mattingly.....	2,438		1,292.11	W. F. Johnson.....	2,933		1,173.20
Thos. J. Mattingly.....	2,510		1,330.29	Augs. R. Holden.....	2,280½		912.20
Ed. T. Maxey.....	208		110.24	C. W. Eve.....	2,693		1,077.20
M. W. Moore.....	640		329.20	Henry Taylor.....	215		86.00
M. Noyes.....	2,259½		1,197.52	L. Woodward.....	2,495		998.00
C. M. Robinson.....	1,448	130½	1,640.91	C. P. Brown.....	2,837½		1,135.00
J. A. Runyan.....	2,107½		1,116.83	John P. Boss.....	2,495		998.00
Carl H. Shaifer.....	216		114.48	L. Petrie.....	2,277		910.80
A. B. Smith.....	2,425½		1,347.11	J. F. Cummins.....	610½		244.20
B. D. Stallings.....	721½		382.39	J. B. Rice.....	357		142.80
T. Buckey Taylor.....	2,465½		1,306.70	Henry Webb.....	2,061		824.40
C. A. Waterman.....	2,361		1,554.27	John W. Usilton.....	2,463		985.20
E. M. Wheat.....	2,480½		1,639.82	Robert O. Hilliard.....	106		42.40
W. W. Deloe.....	3,126½		1,656.94	Mark H. Tolan.....	2,276		910.40
A. T. Foxwell.....	2,539½		1,345.93	Geo. J. Woodgate.....	2,113		845.20
L. H. Post.....	2,872½		1,522.35	Wm. M. Stuart.....	2,975		1,190.00
John W. Thomas.....	2,487		1,318.11	Jno. Armstrong.....	505½		202.20
P. B. Brown.....	836		334.40	M. J. Scannell.....	1,973½		789.40
Raymond L. Burke.....	2,398		959.20	Casper C. H. Moxley.....	277		110.80
Geo. B. Carter.....	2,529		1,011.60	Albert E. Ingalls.....	2,509		1,241.30
Chas. P. Cassidy.....	408		163.20	U. S. Iowdermilk.....	2,695½		1,078.20
Martin Cuff.....	2,416½		966.60	Samuel E. Mullan.....	2,297		918.80
O. F. Dunlap.....	2,429		971.60	S. M. Davis.....	2,736		1,206.85
L. A. Etchison.....	444		177.60	R. J. Hale.....	2,369		947.60
A. D. Haynes.....	2,534		1,013.60	J. W. O'Rourke.....	1,132½		453.00
Geo. W. Hinman.....		313	1,001.60	T. R. Davidson.....	624		249.60
John Mallard.....	48		19.20	G. W. Boynton.....	210		84.00
James W. Richards.....	48		19.20	A. R. Bell.....	235		94.00
Geo. P. Sargent.....	302		120.80	J. F. Grant.....	1,246		498.40
R. D. Shropshire.....	48		19.20	D. M. Sandidge.....	2,374		919.60
G. Watkins Warfield.....	296		118.40	M. R. Savage.....	2,186		874.40
A. E. Riddle.....	3,080		1,385.97	Jno. C. Gorman.....	2,463		985.20
Brskine Hutcheson.....	2,475		550.24	Wallace Brewer.....	2,901		1,160.40
J. Garland Nantz.....	1,781		333.92	Jas. O. Gorman.....	2,774		1,109.60
Wm. H. Fisher.....	3,179		1,589.50	J. B. Campbell.....	887½		355.00
H. W. Gray.....	2,632½		1,316.25	Sam'l Wehrly.....	2,368		947.20
W. McFarlane.....	2,549½		1,279.50	C. P. Thomson.....	2,404		961.60
F. C. Kemon.....	3,051½		1,525.75	Frank C. Titus.....	218½		87.40
E. C. Crump.....	216		108.00	D. J. McCarthy.....	697½		279.00
M. V. B. Stevens.....	3,002½		1,501.25	Jno. F. McDermot.....	2,648½		1,059.40
P. H. Smith.....	2,815		1,266.70	Sam'l Ferrier.....	2,682		1,072.80
J. S. Burnside.....	3,075		1,383.69	Geo. E. Dummer.....	2,446		978.40
M. Brosnahan.....	2,903½		1,306.65	Ralph E. Dittoe.....	2,574		1,029.60
Wm. H. Norton.....	2,861½		1,287.62	Charles C. Russell.....	1,866½		746.60
Sumner K. McDonough.....	425½		191.48	D. S. Walton.....	2,470		988.00
H. A. Graham.....	1,252		500.80	Edward Saxton.....	2,684		1,073.60
J. F. Chipley.....	2,632½		1,058.75	W. R. Abbott.....	437½		175.00
J. G. Forney.....	2,415		1,020.01	Geo. M. Evans.....	365		146.00
Claude E. Haines.....	303		121.20	W. H. Dexter.....	2,918		1,167.20
T. W. Howard.....	2,860		1,144.00	H. B. Denny.....	3,055		1,222.00
Jas. H. Alburtis.....	304		121.60	W. R. Carver.....	2,260½		904.20
J. C. Speer.....	2,323½		929.40	Geo. Terwilliger.....	215		86.00
E. H. Patterson.....	297½		119.00	John F. Connolly.....	2,309½		1,465.52
W. B. Estey.....	1,430		572.00	W. G. Glenn.....	2,040		848.90

No. 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK—cont'd.				TIME WORK—cont'd.			
Frank H. McClellan....	356		\$142.40	Coleman E. Bishop ...	1,837		\$1,282.92
E. G. Farrell	2,300		921.60	Geo. C. Havenner	847½		449.16
Chas. E. Groome	2,375½		950.20	Chas. W. Otis	1,823		1,223.05
Chas. M. Myers	833		333.20	Chas. Garrels	1,012½		406.44
A. G. Allison	2,279½		996.24	Julia P. Humphrey		234	748.80
George Baggett	407		162.80	J. L. Morrison	15½		6.20
W. P. Chew	1,951½		858.57	J. M. Maloney	673½		597.22
W. S. Brooks	2,439		1,443.20	Jno. J. Higgins	1,552	90	980.80
Chas. L. Spencer	218		87.20	Joseph S. Clark	1,731½		810.73
E. E. Helm	2,306½		1,241.08	E. L. Russ	1,863		745.20
J. W. Count	216		86.40	M. Barringer	2,549		1,212.65
A. B. Bennett	2,705½		1,082.20	Samuel M. Holt	665½		266.20
Chas. Danenhower	2,821		1,128.40	B. G. Ferguson	1,808		726.40
W. M. Boyd	2,947		1,178.80	H. Clay Evans	2,685		1,269.80
J. D. Cosby	224		89.60	R. F. Hann	2,162½		865.00
Christian C. Auracher ..	560½		262.77	J. W. Graham	1,639½		655.80
H. L. Davison	2,527		1,010.80	Chas. W. Bell	2,589		1,035.60
W. H. Brock	2,472½		989.00	Geo. W. Cutcheon	123½		49.40
G. W. Sargent	2,650½		1,060.20	F. A. Allison	1,633½		653.40
Andrew Turnbull	645½		258.20	F. E. Boyd	1,561		600.40
J. W. Fite	2,230		892.10	C. E. Etchberger	1,751	106	1,537.49
Amos Irving	2,755½		688.84	Warren G. Fearing	1,624½		649.80
James Jackson	2,906		726.46	Wm. F. Perkins	1,665		662.00
Samuel Cole	2,736		683.96	Philip S. Steele	2,591		* 1,072.67
Geo. S. Kauffman	153		61.20	C. H. Babcock	1,427		691.25
David S. Holland	823½		205.87	E. Cornman, jr.	2,277		1,206.74
Walter Y. Clark	2,769½		692.70	Chas. W. Hill	1,546		727.40
Benjamin Holmes	3,053		763.21	Geo. S. Johnson	2,234½		917.80
Jos. Spells	48		12.00	A. J. Alden	1,781		712.40
John T. Heath	51		20.40	Edward T. Williamson ..	1,827½		731.00
John A. Tafe		335	1,005.00	B. F. Barrows	1,650½		660.20
William Burlingame	2,235		419.05	Daniel V. Fenton	801½		367.00
John Cover	60½		32.06	L. A. Wisener	1,700½		680.20
T. G. Williams	2,311		924.40	Geo. R. Boone	1,965		786.00
J. Warren Fletcher		290	1,229.60	E. E. Longley	1,589		635.60
Chas. W. Kirkly		313	1,327.12	D. S. McConnell	1,860		744.00
Wm. M. Crawford	2,231½		1,182.65	W. R. Chipley	1,154		477.20
Harry B. Major	3,065		1,377.61	William Hutchison	1,735		433.73
Chas. H. Leeds	3,104		1,395.15	F. H. Jones	1,722		688.80
C. T. Harding	2,899		1,302.92	Maurice Woulfe	1,659½		311.16
W. M. Camp	2,702½		1,081.60	W. N. Brockwell	334		133.60
Geo. H. Ellis	1,605		642.00	Jed. Shaw	1,325		530.00
C. A. Hughes	2,407		1,478.25	James W. Rodgers	1,460½		584.20
Jos. A. Justice	48		19.20	C. E. Manny	1,523		609.20
Walter B. Hayson	2,610½		652.58	C. W. Henshaw	1,588		635.20
E. C. Smith	2,454		981.60	E. E. Mendenhall	1,878		751.20
Frank B. Mercer	2,383½		1,556.99	R. H. Freeman	442½		177.00
C. P. Evans	2,175½		870.20	R. E. Barnes	497		198.80
J. S. Robinson	346½		138.60	Zidon E. Ross	2,273		1,090.81
Chas. A. Croney	2,360		1,180.00	Dan. L. Sansom	2,050½		820.20
Samuel Jacob	2,285½		1,211.05	J. M. Eggleston	2,236		1,066.43
J. P. Herren	582		232.85	J. N. Hall	2,346		938.40
C. J. Alexander	3,128		1,564.00	Hoyt A. Holton	1,244		497.60
J. C. Quein	2,581		1,032.40	Geo. Winter	1,256½		502.55
Jno. P. Hiakel	1,328½		658.60	Sam'l C. Hanlon	1,606½		642.75
Jos. V. Murray	2,351		962.77	E. W. Pipe	158		63.20
Joseph Jackson	2,534		633.55	R. E. Edmondson	1,736		694.40
Seaton Donoho	1,873		749.20	Alex. Calhoun	2,049½		956.37
C. F. Gilmore	2,708		1,329.20	William L. Abbott	1,966		971.17
C. T. Johnson	3,039½		1,497.00	Fred. F. Fulkerson	1,338		435.94
Allen A. Garner	208½		83.40	Wm. A. H. Turner	1,634		653.60
Charles F. Billopp	1,201		480.40	S. S. Daniels	1,447		578.80
Chas. M. Fee	359½		143.80	W. A. Hartman	2,122½		849.00
Wm. H. Miller	2,560½		1,318.83	Robt. E. Youart	1,600		610.00
E. G. Darnell	2,064½		1,127.86	Edward Bailey	2,090½		875.98
William Floyd	2,339		957.60	Louis Arenberg	1,327½		531.00
Harry D. Armstrong ..	593		241.20	O. S. Miller	1,561½		624.60
O. Shaw	2,730		1,206.03	L. C. Herr	3		1.20
Robt. F. Palmer		253	1,454.75	Ira M. Ingalls	1,158½		463.40
E. W. Denison	1,995½		1,356.77	A. E. Townsend	424		169.60
Benj. F. Henry	500½		200.20	L. C. Hover	2,253		923.50
John Weber	2,362½		945.00	M. P. Hamilton	25		10.00
P. P. Glass	2,223		1,178.17	Noel B. Parks	1,448		579.20
F. A. Rhoderick	2,005½		1,064.64	T. A. Dougherty	1,588½		635.35

No. 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK—cont'd.				TIME WORK—cont'd.			
John R. Hathaway, sr.	1,645½	.....	\$658.20	G. Wm. Sollers	1,306½	.....	\$522.60
Henry P. Murphy	1,865	.....	746.00	Chas. H. Sawyer	1,597½	.....	639.00
Clayton H. Dunning	1,566½	.....	626.60	Byron W. Bonney	765	140½	1,002.21
John R. Nelson	241	.....	6.25	J. E. Fitzgerald	1,287	.....	514.80
Chas. F. Garrette	2,709	.....	1,167.47	Edward Eberbach	3,089	.....	1,378.70
I. A. Powell	1,340½	.....	536.20	C. Albert Ruckle	1,576½	.....	656.33
John Waller	1,934½	.....	483.60	Geo. H. Proctor	1,082	.....	432.80
E. G. Torrey	1,514	.....	605.60	Wm. Vandever	937½	.....	375.00
John Green, jr.	1,656	.....	662.40	H. H. Jackson	912	.....	228.00
Roy D. Hassler	1,538½	.....	615.40	A. A. Mayerstein	720½	.....	288.20
E. T. Atkinson	1,427	.....	570.80	F. E. Garrison	588	.....	235.20
Wm. E. Lewis	1,679½	.....	671.80	Sam'l J. Gompers	221½	.....	88.60
Albert T. Austin	1,481	.....	592.40	Thos. W. Cadick	1,534½	.....	613.80
Chas. S. Dennison	1,528	.....	611.20	A. G. Reynolds	1,431½	.....	574.60
Leslie S. Hill	1,632	.....	652.80	E. E. Crippen	1,904	.....	856.80
T. F. Lyons	1,479	.....	591.60	H. W. Stevens	747	.....	373.50
A. P. Sutton	1,243½	.....	497.40	James E. Young	2,340	.....	655.25
W. J. Cook	1,799	.....	738.55	L. C. Hay	.....	132	297.00
W. R. Johns, jr.	105½	.....	55.91	J. M. Richardson	.....	145	326.25
J. M. Thompson	1,196½	.....	478.60	J. T. Thompson	.....	78	175.49
Alfred J. Arnold	1,512½	.....	604.85	T. E. McCracken	.....	½	1.12
Henry Noyes	1,333½	.....	433.55	Alex. Elliott	.....	313	1,799.75
Wm. Mc F. Thawley	617	.....	246.80	Robert Lowry	2,605	.....	1,391.00
F. H. Hopkins	1,232½	.....	492.90	D. W. Beach	2,773	.....	1,386.50
Thos. J. Alleger	1,183½	.....	473.40	Tony Weiner	564	.....	265.08
T. M. Donn	2,109½	.....	860.15	H. C. Cowell	2,724	.....	1,280.28
F. T. Quigley	2,767½	.....	1,123.49	Henry Rees	2,226	.....	1,046.22
H. M. McElfresh	3,019	.....	1,373.30	W. C. Wilton	2,315	.....	1,088.05
Chas. I. O'Neill	1,319½	.....	699.31	R. B. Finlay	2,366	.....	1,112.02
H. D. Pryor	1,284	.....	513.60	Oliver E. Fitchenberg	93	.....	43.71
W. W. Harley	610½	.....	244.05	John Lehman	2,481	.....	1,166.07
J. B. Hicklin	1,340½	.....	536.05	James F. Shannon	936	.....	439.02
E. L. Kaiser	1,795½	.....	718.20	Joseph Boyle	2,130	.....	1,001.10
James Kane	2,903½	.....	1,162.44	W. B. Daly	53	.....	24.91
Wm. C. Sefton	2,801	.....	1,271.50	T. J. McLaughlin	2,295	.....	1,078.65
A. W. Tebbetts	2,329	.....	1,080.57	Chris. Leavy	8	.....	3.76
R. S. Reed	1,139½	.....	455.80	David Leonard	2,334	.....	1,096.98
Hugh G. Tilley	1,591	.....	397.74	Theod. Erck	2,363	.....	1,118.81
G. S. Ramsburg	1,358	.....	543.20	Frank S. Lanahan	2,476	.....	1,163.72
A. Purcell	989	.....	395.60	F. S. Clinton	847	.....	398.09
M. J. Sullivan	1,151½	.....	460.60	J. S. Smith	2,735	.....	1,285.45
Geo. H. Eakle	1,285½	.....	514.20	H. J. Carey	2,395	.....	1,125.65
J. Myers Taylor	1,343	.....	537.20	Martin Mangold	2,798	.....	1,315.06
T. W. Burt	94½	.....	47.74	W. B. Kelly	2,784	.....	1,308.48
B. F. Williams	1,021	.....	408.40	W. R. Westman	2,567	.....	1,206.49
J. E. Keefe	2,785	.....	1,114.00	W. S. Whitmore	2,767	.....	1,300.49
W. Hutchinson	2,863	.....	1,373.10	T. W. Shomo	2,724	.....	1,168.93
W. H. Gilliland	2,619	.....	1,047.60	John J. Fitzgerald	2,442	.....	1,074.48
R. E. Beall, jr.	210½	.....	84.20	John J. O'Brien	2,221	.....	977.24
S. J. Leech	2,272	.....	908.80	John J. Burns	80	.....	35.20
Geo. A. Terrett	2,448	.....	458.98	Geo. H. Thayer	2,725	.....	1,199.00
William B. Syphax	2,775½	.....	1,110.20	W. H. Parker	2,830	.....	1,245.20
A. A. Thomson	378	.....	94.50	Byron Waters	2,686	.....	1,181.84
Jerome Taylor	2,306	.....	578.00	Edward Dunn	656	.....	262.40
S. U. Bailey	2,351½	.....	940.60	John H. Herbert	2,250	.....	900.00
H. G. Johnson	2,909½	.....	1,445.55	Will A. Cunningham	275	.....	110.00
D. P. Rowell	2,620	.....	1,048.00	Thad Baden	2,823	.....	1,129.20
C. M. Kenyon	2,588	.....	1,035.20	John Babcock	2,268	.....	907.20
Ed. Morgan	421	.....	216.88	George Gayle	2,781	.....	1,112.40
Albert Baker	2,511½	.....	1,004.60	Charles Russell	2,497	.....	998.80
Chas. W. Summers	2,527½	.....	1,031.50	H. Dunning	2,436	.....	974.40
Bernardine Smith	2,248½	.....	899.40	C. H. Stout	2,970	.....	1,188.00
F. C. Barker	2,331½	.....	1,029.94	Thomas B. Waters	2,738	.....	1,059.20
H. O. Simons	2,476	.....	1,266.17	E. H. McKinnon	3,181	.....	1,113.35
Ed. Reinmuth	2,494½	.....	604.41	A. L. Meyers	106	.....	37.10
D. E. Moore	2,596½	.....	1,038.60	R. McNicholas	2,834	.....	991.90
James P. Ray	2,125	.....	531.24	James Wisted	1,784	.....	614.40
F. A. Rising	2,343	.....	937.20	William Corbin	803	.....	200.75
W. F. Ashford	1,828	.....	731.20	C. E. Chinn	477½	.....	119.36
Fred A. Palmer	2,204	.....	806.44	John Murphy	6	.....	3.37
Edward A. Huse	2,096½	.....	838.60	James E. Freeman	651½	.....	162.87
J. R. McKelvey	1,809½	.....	723.80	James M. Toy	2,502	.....	625.50
J. Guest King	1,775½	.....	710.20	Henry Thomas	2,109½	.....	527.37
Judson J. Withall	1,927	.....	770.80	Mary H. Barrell	.....	58½	160.19

No. 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK—cont'd.				TIME WORK—cont'd.			
Kate Laughran	1,788	.....	\$335.20	J. A. Dawson	318	.....	\$127.20
Mary Noonan	143	.....	26.81	H. A. Gilbert	1,210	.....	484.00
Johanna Fitzgerald	162	.....	30.37	Catharine Schermerhorn.	2,656	.....	557.76
Mary Curry	1,248	.....	233.94	Elizabeth Davis	2,600	.....	546.00
Mary McDonnell	1,948	.....	565.19	Mary Callahan	2,491	.....	523.11
Mary Kerrigan	1,895	.....	355.51	Elizabeth Listinger	1,936	.....	406.56
Louisa V. Wilkes	2,408	.....	451.50	Jennie Jackson	1,984	.....	416.64
Bridget Carroll	1,428	.....	267.70	Bridget McNamara	2,628	.....	551.88
Jennie Cunningham	1,635	.....	306.54	Mary O'Brien	2,068½	.....	434.38
Sarah Gibson	1,229	.....	230.39	M. Dellamico	1,136	.....	238.56
Mary Donnelly	1,672	.....	313.47	A. Gormley	2,198½	.....	461.68
Ellen Ahearne	1,818	.....	340.90	Blanch Hurley	2,369½	.....	497.59
Ellen Dent	1,308	.....	245.50	Sara E. Robinson	2,387	.....	501.27
Mary Agan	1,458	.....	273.40	Delia Cremen	1,884	.....	395.64
C. E. Madden	416	.....	78.00	Mary E. Daugherty	2,740	.....	575.40
Mary Costello	1,728	.....	324.00	Joanna Corridon	2,102½	.....	441.52
Annie Boucher	852	.....	159.77	Alice R. Vance	2,289½	.....	480.79
Margaret White	1,038	.....	194.60	Jennie Marcey	2,410	.....	506.10
Honora Sullivan	1,061	.....	198.89	Rose Carrothers	2,243½	.....	471.13
Ellen Vogler	24	.....	4.50	Maggie McKie	2,570	.....	539.70
Johanna Dunnigan	1,824	.....	341.95	Susie V. Sinon	2,680	.....	562.80
Lizzie Washington	288	.....	53.97	Fannie Beamer	2,409½	.....	505.99
Wm. Cruso	2,369	.....	592.25	Jennie McNamara	2,340	.....	492.40
Ellen Warren	1,170	.....	219.40	Margaret Sweeney	20	.....	4.20
Frances Butler	1,606	.....	301.12	Katie Connor	583	.....	222.43
Deborah Gainey	594	.....	111.37	Amelia E. Cromelein	2,224	.....	467.04
Mary Fitzgerald	1,650	.....	309.40	Nellie F. V. Lyons	1,081	.....	227.01
Mary Conley	444	.....	83.25	Alice E. Toner	1,981½	.....	416.11
Mary Columbus	184	.....	34.50	Annie E. Hauer	235	.....	49.35
Bridget Callan	594	.....	111.37	Lizzie Walters	2,060½	.....	432.70
Lucy Long	30	.....	5.62	Jennie Lyons	2,624	.....	551.04
Bridget Lynch	1,188	.....	222.70	Fannie E. Strong	2,294	.....	481.74
Sarah S. Powell	48	.....	9.00	L. V. Godey	2,104½	.....	441.94
Catherine Keane	600	.....	112.00	Elizabeth Dement	2,514½	.....	528.04
Josephine Brightoff	330	.....	61.87	Henrietta Tompkins	2,638	.....	553.98
Louisa Fleming	468	.....	87.74	Helen Fields	2,052½	.....	431.02
Catherine French	300	.....	56.25	Mary M. Burges	2,192	.....	460.32
G. L. Stolpe	294	.....	55.12	Sadie Garthwait	1,658½	.....	348.28
Hortense Roberts	78	.....	14.62	Henrietta S. McMahon	342	.....	71.82
Mary Newby	42	.....	7.87	Sue S. Hauck	2,385½	.....	500.95
Elmer Aschenbach	29½	.....	11.80	Kate L. Smith	1,622½	.....	340.72
Lewis M. Wood	49	.....	24.50	Lida J. Horn	643	.....	135.03
James A. Johnson	1,100	.....	343.75	Emma Swain	2,379	.....	499.59
Cornelius Thomas	889	.....	277.81	Annie Gaughran	1,878	.....	394.38
A. B. Auer .....	.....	313	1,799.85	Cecelia A. Moore	2,058	.....	432.18
C. D. Parsons	1,323	.....	701.19	Julia Murrell	2,054	.....	431.34
W. P. Martin	440	.....	235.32	Mary Jackson	2,264	.....	475.44
Thomas F. Maher	2,351	.....	940.40	Nellie Blair	2,308½	.....	481.78
John F. Clarkson	2,203	.....	881.20	Emma G. Boll	2,413½	.....	506.83
James Scott	2,520½	.....	1,008.20	M. F. Cushley	1,571	.....	329.91
George McKee	2,298½	.....	919.40	Cora Reily	810	.....	170.10
Wm. Donaldson	258	.....	103.20	Emma Long	2,318	.....	486.78
A. E. Sardo, jr.	2,495	.....	998.00	Annie Chapman	2,469½	.....	518.59
John Burnside	2,431	.....	972.60	Veronia Bradner	1,972	.....	414.12
Jeremiah Donovan	2,373	.....	942.20	Mary Hayes	2,677	.....	562.17
W. G. Dunne	2,541	.....	1,016.40	Nellie Hopper	2,668	.....	560.28
John N. Wright, jr.	2,243½	.....	897.40	Isabella Girvin	2,632	.....	552.72
Chas. F. Davis	2,438	.....	975.20	Mary E. O'Brien	2,609	.....	547.89
J. L. Harrigan	1,669	.....	667.60	Gertrude McCubbin	359	.....	75.39
W. E. Scott	2,431½	.....	1,052.60	Alice A. Fon Narbutt	216½	.....	45.46
Harry S. Hill	2,455	.....	962.00	M. L. Birchard	1,680	.....	352.80
Chas. J. Vagt	1,736	.....	694.40	Amelia Hess	2,600½	.....	546.10
J. C. Watson	2,556½	.....	1,022.60	Maggie Byrne	2,705	.....	558.05
R. A. Porter	1,731½	.....	692.60	A. J. Gallagher	2,549	.....	535.30
James A. McGrane	1,554½	.....	621.80	Mary Johnson	2,499	.....	524.79
James D. McKinnon	2,032	.....	812.80	Annie Albert	2,365	.....	496.64
M. E. Flanagan	2,492½	.....	971.80	Kate Ager	2,476	.....	519.96
David H. Moran	2,410½	.....	964.20	Lizzie Means	2,745	.....	596.45
Wm. H. Weber	2,355	.....	942.00	Bessie Stuart	2,583½	.....	542.53
J. H. Furbershaw	2,496½	.....	998.60	Geo. S. Emery	2,405½	.....	1,033.50
Edward Duff	2,473½	.....	989.40	A. M. Parsons	2,747	.....	1,098.80
Charles W. Hurdle	112	.....	44.80	Julius N. Keck	2,505	.....	1,002.00
John A. Noel	2,729	.....	1,223.24	H. T. Williams	2,076	.....	742.50
A. J. Preall	61	.....	24.40				

No. 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK—cont'd.				TIME WORK—cont'd.			
E. C. Soules.....	2,541	.....	\$800.41	Theresa Bott.....	1,156	.....	\$342.76
Wm. S. Seymour.....	2,433	.....	729.90	T. J. O'Leary.....	2,504	.....	1,001.60
Geo. H. Foskey.....	3,101½	.....	775.37	Henry Payne.....	577	.....	144.24
L. A. Iardella.....	2,506½	.....	626.62	Frank Fraser.....	2,343	.....	938.00
William Lang.....	3,486	.....	871.50	R. C. McAuley.....	2,647	.....	1,186.29
Richard E. Jordan.....	2,738	.....	684.50	S. T. Brown.....	2,798½	.....	1,666.40
Edward Suit.....	506	.....	126.50	Edwin Johnson.....	2,281½	.....	912.60
E. E. Harper.....	930	.....	232.50	Annie O'Hare.....	2,461½	.....	504.31
Alexander Gould.....	3,187	.....	796.74	Frank Dial.....	842	.....	210.50
William O'Dwyer.....	3,061	.....	765.25	David Gillen.....	2,498½	.....	999.40
James Maloney.....	816	.....	204.00	Lillie Fenton.....	2,620½	.....	550.40
Arthur E. Payne.....	238	.....	59.50	Ada M. Greenwood.....	2,435	.....	511.35
C. C. Haddock.....	1,904½	.....	475.87	Jennie Speake.....	557	.....	116.97
Douglas Reid.....	1,968	.....	492.00	Samuel N. Hill.....	1,607	.....	401.75
J. B. Stoops.....	3,157½	.....	789.36	Mamie Hays.....	2,472½	.....	519.22
Richard Savage.....	1,894½	.....	473.61	L. C. Shillings.....	2,300½	.....	575.10
Daniel C. Ray.....	2,624½	.....	656.10	J. R. Jones.....	1,363½	.....	340.84
E. H. Woodell.....	196½	.....	49.12	Benj. J. Davis.....	2,331	.....	582.75
Wm. McGrath.....	48	.....	12.00	Emma St. Clair.....	307	.....	64.47
John Meaney.....	48	.....	12.00	Mary Nally.....	1,271	.....	266.91
G. W. King.....	716	.....	179.00	Stella Stanhope.....	2,313	.....	519.21
Wm. T. Hall.....	2,502	.....	748.10	Ida Bemis.....	1,185	.....	248.85
W. T. Benjamin.....	2,489½	.....	622.36	F. R. Johnson.....	1,133	.....	453.20
Fred. Hudson.....	846	.....	211.50	Wm. Gaunt.....	278	.....	11.20
Wm. H. Sebastian.....	1,509	.....	377.25	W. S. Webster.....	1,171	.....	468.40
B. J. Berry.....	2,613½	.....	653.34	Gertrude Wooley.....	283	.....	59.43
Wm. C. Heck.....	2,174	.....	869.60	Josie Costello.....	445	.....	93.45
M. A. W. Louis.....	.....	313	1,669.33	Carrie Bates.....	259½	.....	54.49
Jno. F. Hutcherson.....	2,660½	.....	1,063.20	Sarah Dyer.....	569	.....	119.49
Annie M. Hollingshead.....	2,580	.....	541.80	Maggie Sweeney.....	1,082	.....	227.22
Geo. Shurland.....	1,106	.....	276.50	Minnie Bates.....	312	.....	71.52
C. S. Lake.....	2,699½	.....	674.86	Mary Hill.....	1,147	.....	240.87
J. E. Parsons.....	2,538½	.....	634.62	A. W. Graham.....	2,573	.....	1,030.00
Wm. Hutchinson.....	1,001	.....	250.25	M. T. Jones.....	1,113½	.....	233.82
Kate M. Ellis.....	2,358	.....	495.17	James Kane.....	2,348	.....	939.20
Lizzie Farquhar.....	2,579	.....	541.59	J. M. Edmunds Brown.....	2,787	.....	836.10
John Rickells.....	2,510	.....	627.50	W. H. Carr.....	2,551	.....	765.30
J. J. Britt.....	273	.....	68.25	J. M. McGibbon.....	2,423	.....	726.90
Thomas H. Owings.....	2,637½	.....	1,055.00	Thos. H. Morgan.....	1,613	.....	483.90
H. O. Fischer.....	190	.....	76.00	F. S. Ratcliffe.....	1,893	.....	567.90
J. E. Horning.....	1,259	.....	503.60	Stephen Caldwell.....	2,356	.....	815.15
Thomas McKee.....	700	.....	280.00	Frank Compton.....	442	.....	132.60
F. S. Cawson.....	2,821½	.....	1,315.75	Jas. S. Briggs.....	2,383	.....	595.75
Annie Carpenter.....	2,660½	.....	558.69	Max Craft.....	1,959	.....	489.75
Jessie Sothoron.....	2,742	.....	575.81	Charles P. Goodacre.....	2,118	.....	529.50
L. B. Best.....	2,827	.....	593.67	B. C. Smith.....	2,600	.....	812.50
Ellen McCarthy.....	2,255	.....	473.55	James L. Feeney.....	1,607	.....	642.80
Jennie Baylie.....	2,541	.....	533.59	C. S. Mills.....	1,486	.....	445.80
Henrietta Same.....	2,278½	.....	478.48	P. Wood.....	786	.....	196.50
Mary Leary.....	2,860½	.....	600.69	H. D. Tracy.....	624	.....	156.00
Libbie A. Flahavhan.....	1,676½	.....	352.06	A. H. Black.....	616	.....	154.00
Mary A. Hurdle.....	2,247½	.....	471.97	H. W. White.....	516	.....	129.00
Mary E. Kelly.....	968	.....	203.27	Posey F. Hayden.....	328	.....	82.00
Emma Reese.....	672	.....	141.12	Sarah P. Clarke.....	951½	.....	199.81
Simon Pocher.....	2,667½	.....	666.68	Annie Hamn.....	1,008	.....	211.68
A. G. Penn.....	366	.....	91.50	Flora Edwards.....	1,086	.....	228.06
Katie C. Clark.....	2,473½	.....	519.43	Bessie G. Cralle.....	1,049	.....	220.29
Addie Sriver.....	2,770	.....	581.69	Alice Williams.....	953	.....	200.13
H. C. McFarland.....	.....	313	1,669.33	Chas. I. O'Neill.....	80	.....	20.00
Lizzie McCullip.....	2,467½	.....	518.17	Geo. W. Pierce.....	1,101½	.....	440.60
Edw. C. Maher.....	1,544	.....	617.60	Lena M. O'Leary.....	264	.....	55.44
Emma Lane.....	2,333½	.....	490.03	Mollie Kelly.....	313	.....	65.73
A. R. Jewett.....	2,432½	.....	510.82	Anna Seufert.....	1,020½	.....	214.30
Estella Peach.....	2,727½	.....	572.77	Lizzie Abbott.....	1,084½	.....	227.74
Hannah Coyle.....	160	.....	33.60	Bertha Fenton.....	1,098	.....	228.90
N. R. Newby.....	195	.....	48.75	E. H. Kingman.....	960½	.....	384.20
Jno. H. Robb.....	2,444½	.....	977.80	Jas. W. Jordan.....	1,072	.....	428.80
A. W. Potter.....	2,382	.....	500.22	Albert G. Lewis.....	1,082	.....	432.80
Ira E. Cole.....	2,632½	.....	1,176.81	A. C. Shippen.....	1,099	.....	274.75
Walter L. Price.....	2,359½	.....	1,056.99	Mary Quill.....	331	.....	69.51
Mary Applegate.....	1,740½	.....	367.50	H. D. Knight.....	935	.....	374.00
Wm. H. Bush.....	1,911	.....	477.74	D. H. Denham.....	442	.....	176.80
Nellie H. Sheep.....	2,495	.....	523.95	J. T. Moffat.....	2,352	.....	940.80
Ella Wallingford.....	2,275	.....	477.75	Katie Brennar.....	2,435	.....	519.21

No. 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK—cont'd.				TIME WORK—cont'd.			
Rosa Blush.....	2,102	.....	\$441.42	John O'Hare.....	2,518	.....	\$1,334.51
Charles L. Clarke.....	1,037	.....	259.24	W. C. Talley.....	2,829½	.....	1,131.80
E. A. Barnes.....	2,208	.....	463.67	P. Louis Rodier.....	2,492½	.....	997.00
A. W. Kitchen.....	2,267	.....	476.07	J. T. Britt.....	48	.....	24.00
Mary A. Whelan.....	2,121½	.....	445.61	Jas. J. Hennessey.....	2,865½	.....	1,432.75
James E. Hardy.....	2,255	.....	1,009.15	J. B. Trudgian.....	529½	.....	264.75
John S. Waugh.....	1,784½	.....	446.11	P. W. Wiley.....	1,843½	.....	921.75
Wm. Donath.....	1,327½	.....	331.87	John Goodrick.....	2,665	.....	1,199.25
H. C. Compton.....	252	.....	100.80	B. F. Wright.....	2,642½	.....	1,189.10
Julia Connolly.....	2,149	.....	451.28	S. S. Culbertson.....	2,779½	.....	1,250.75
John D. Myers.....	2,062	.....	824.80	H. C. Underwood.....	2,624½	.....	1,180.99
J. M. Heizer.....	1,064	.....	266.00	W. B. Donaldson.....	2,726½	.....	1,090.60
Susie Coombs.....	2,371½	.....	498.00	John Crowe.....	2,851	.....	1,140.40
F. A. Carpenter.....	1,768½	.....	707.40	Wm. A. Whitney.....	2,557	.....	1,022.80
Sarah Sheahan.....	2,476	.....	519.96	Chas. E. Hinsley.....	2,909	.....	1,163.60
Catherine Burke.....	2,259½	.....	474.49	Neil H. Bigger.....	2,828½	.....	1,131.40
E. F. Degges.....	1,151	.....	287.75	O. N. Lanning.....	2,909½	.....	1,163.80
Lewis Reed.....	2,270½	.....	567.61	Frank McDermot.....	888	.....	355.20
John D. Wood.....	1,865	.....	746.00	Alpheus Sholl.....	1,586	.....	634.40
Edwin F. Christy.....	1,298½	.....	519.40	P. A. Caton.....	2,722½	.....	1,089.00
Alton B. Carty.....	1,847	.....	738.80	F. J. Maloy.....	257	.....	102.80
I. A. Hart.....	1,859	.....	464.75	W. H. Reese.....	2,874	.....	1,149.60
C. H. Robinson.....	1,829	.....	457.25	John M. Broas.....	2,624	.....	1,049.60
James Clements.....	1,072	.....	267.99	Daisy E. Patton.....	825	.....	173.25
John W. Freeman.....	1,626½	.....	406.62	J. J. Brady.....	1,037	.....	414.80
R. K. Washington.....	1,823	.....	455.74	Annie Dillon.....	900	.....	189.00
Joseph H. Byrne.....	2,336½	.....	934.60	Flora E. Ballard.....	617	.....	129.57
Theresa Hawke.....	2,073	.....	435.33	Rose Lydick.....	807	.....	169.47
Lavinia Hicks.....	1,542	.....	323.81	J. S. Settle.....	816	.....	204.00
J. W. Shackelford.....	1,673½	.....	418.37	Theresa Toumey.....	812	.....	170.52
Theo. Reier.....	1,429	.....	571.60	Mary A. Mulquin.....	908	.....	190.68
W. J. Hart.....	1,115	.....	446.00	Adam P. Funk.....	889	.....	222.25
Angela Haravey.....	1,140	.....	240.66	James Arden.....	973½	.....	243.37
Mittie Magruder.....	1,388	.....	291.47	E. J. De Lorme.....	704½	.....	147.84
Dennis O'Leary.....	1,082½	.....	433.00	Maggie Burke.....	877	.....	184.54
H. Lee Treiber.....	1,265	.....	316.25	John Hyder.....	784	.....	196.00
Nellie Clark.....	1,468½	.....	308.38	Julia E. Gray.....	567½	.....	119.17
Ella M. Delaplane.....	1,658½	.....	355.45	Philip Witts.....	2½	.....	1.00
Jos. Carter.....	443	.....	110.75	Jas. R. Lee.....	359	.....	89.75
Columbus Hall.....	1,533	.....	540.20	Jas. A. Frazier.....	2,460	.....	615.00
Thos. J. Donovan.....	1,011	.....	252.75	C. C. Fitzgerald.....	411½	.....	102.87
Carlotta Clark.....	1,098½	.....	230.68	Wm. C. Hubbell.....	214	.....	53.50
Florence Graves.....	1,124	.....	236.04	Daniel J. Collins.....	8	.....	2.00
Annie M. Silence.....	1,052	.....	220.91	Bion O. Bobst.....	24	.....	6.00
Mary Hanlon.....	1,134	.....	238.14	Thos. J. Moylan.....	2,967½	.....	1,187.00
Annie Meehan.....	1,170	.....	245.70	R. W. Summers.....	2,876	.....	1,150.40
C. M. Dorsey.....	953	.....	286.06	John A. Heydler.....	2,483½	.....	993.40
W. H. Harding.....	401	.....	125.31	Daniel P. Noone.....	2,152½	.....	861.00
Wilt Heinard.....	1,418	.....	443.12	J. K. Smith.....	2,648½	.....	1,059.40
J. P. Collins.....	528	.....	165.00	J. T. Shrigley.....	256½	.....	102.60
H. A. Keefer.....	170	.....	112.70	Abner C. Proctor.....	2,599	.....	1,039.60
A. H. Brown.....	2,298	.....	1,217.94	L. M. Cady.....	2,654½	.....	1,061.80
M. L. Browne.....	944	.....	295.00	P. M. Elkins.....	2,740½	.....	1,096.20
John R. Sturgis.....	227½	.....	170.62	Fred A. Saxton.....	1,621½	.....	648.60
E. B. Chambers.....	46	.....	34.50	Jas. B. Knapp.....	2,516½	.....	1,006.60
C. J. Ward.....	945	.....	378.00	John Delahunty.....	209	.....	83.60
Mary F. Wilson.....	93	.....	58.12	H. M. Armisted.....	2,775½	.....	1,110.20
H. H. Humble.....	8	.....	5.00	J. H. Thompson.....	877	.....	350.80
Wm. Wilson.....	144½	.....	90.30	Ed. W. Hearne.....	359½	.....	143.80
J. M. Johnston.....	8	.....	5.00	E. H. McDowell.....	115½	.....	46.20
C. H. Babcock.....	472½	.....	236.00	W. R. Steel.....	2,848	.....	1,139.20
Francis M. McIlvain.....	152	.....	60.80	W. E. Sadtler.....	549	.....	219.60
Chas. E. Morton.....	486	.....	194.40	John O'Brien.....	585	.....	234.00
Geo. H. Zimmerman.....	13½	.....	8.43	E. A. Sullivan.....	372½	.....	149.00
W. C. Israel.....	5½	.....	2.20	H. M. Pomeroy.....	2,391½	.....	956.60
J. W. Cross.....	36	.....	16.87	John G. Kelly.....	2,973½	.....	1,189.40
Chas. L. Shoher.....	389	.....	155.60	R. W. Boorman.....	104	.....	41.60
C. E. Smalley.....	11½	.....	7.18	Win. R. Jagger.....	2,492	.....	996.80
J. E. Bright.....	.....	313	1,799.75	John J. Murray.....	2,824½	.....	1,129.80
S. T. Covert.....	169	.....	716.56	J. C. Mellis.....	2,821½	.....	1,128.60
N. Watkins.....	.....	313	1,669.33	L. H. Emmons.....	2,705	.....	1,082.00
John W. Work.....	2,182	.....	1,156.53	Edwin W. Herbert.....	471½	.....	188.60
J. W. Snyder.....	336	.....	178.08	Wm. H. Dahl.....	2,625	.....	1,650.00
John S. Hogan.....	144	.....	76.32	R. M. Calhoun.....	.....	195½	238.22

No. 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK—cont'd.				TIME WORK—cont'd.			
Jas. Potter		115	\$258. 75	Wm. R. Ramsey		313	\$1, 800. 57
S. P. Dillon		66	148. 50	Wm. E. Thompson	2, 405		202. 50
C. A. Matthews		77	173. 25	James W. Doocy	117		52. 65
John Lavine		43	96. 75	T. W. Shiel	1, 052		475. 32
Irving Gibson	203		50. 75	D. P. Sullivan	501½		225. 67
Thomas Heffernan	2, 709		948. 15	W. W. Stanford	2, 344		937. 60
John Linguist	2, 641		924. 35	Louis W. Cornwell	2, 468		987. 20
C. H. Hunter	2, 498		874. 30	Emanuel Thomas	2, 568½		642. 10
Fred Kemp, jr.	2, 704		946. 40	W. A. Thomas	2, 397½		599. 35
James Nye	2, 415		603. 75	J. T. Dean	1, 584		396. 00
G. Abramson	2, 075		975. 25	John P. Hussey	1, 496		280. 52
Michael Shaen	2, 574		1, 209. 78	E. G. Meyers	2, 458½		983. 40
Jno. E. Parker	2, 550		1, 198. 50	John Tuitt	2, 105½		946. 56
Chas. F. Whitlock	2, 077		726. 95	John Baltzell	2, 153		861. 20
L. E. Etchison	2, 555		894. 25	W. E. Grimes	11		4. 40
T. H. Dade	2, 457		859. 95	B. H. Baxter	14½		6. 00
Perry Brown	1, 420		667. 40	Al. Cottle	191	286	1, 720. 90
Wm. H. Baker	1, 949		682. 15	R. F. Chisolm	1, 996½		798. 60
H. W. Chase	2, 174		760. 90	J. W. Sherman	1, 856½		824. 23
Frank Hasson	1, 885		885. 95	Jas. L. Welty	57		22. 80
Wm. J. Boyd	1, 969		689. 15	J. A. D. Turner	107		42. 80
Armand E. Coquard	1, 670		784. 90	W. P. Anderson	561		224. 40
John P. Schaefer	951		446. 97	Frank A. Schwing	752½		301. 00
W. H. Smith	488		91. 50	J. H. Kahler	2, 542		1, 124. 65
Jas. W. Hughes	3, 400½		1, 904. 28	Geo. C. Reid	112		76. 00
Wm. Robinson	3, 529		1, 870. 37	C. Dolan		8	20. 00
Robert Rose	178		94. 34	C. Pumphrey	80		45. 00
Thomas D. Bennett	2, 881½		1, 152. 60	Jas. Murphy	119		66. 94
Asa L. Carrier	2, 736		1, 094. 40	J. B. Brewer		369½	924. 69
C. C. Chew	246		98. 40	Robert Knowles	310¾		124. 30
Alex. Goodspeed	2, 572		1, 028. 80	Jas. H. Williams	207		82. 80
Oliver Hayes	2, 476		990. 40	John Doran	347½		139. 00
F. S. Kimbark	430½		172. 20	Charles Robinson	310¾		124. 30
Garry Buckingham	408¾		163. 50	Ed. De Maine	435½		217. 75
Geo. S. Garvin	676		270. 40	Jos. Cleary	1, 944		486. 00
T. B. Pumphrey	403½		161. 50	W. M. Laporte	2, 723		931. 05
James H. Houston	296½		118. 60	Geo. W. Slough	306		76. 50
Thomas B. Dickerson	2, 800		875. 00	A. Doleman	172		32. 25
William Fletcher	2, 288		714. 90	R. Haley	128		24. 00
W. E. Johnston	232		72. 50	Thos. Elliott	191		35. 81
Jerry Gallegher	3, 036		948. 75	Andrew Corm	191		35. 81
C. McDevitt	2, 432		729. 60	W. H. Scribner		371	834. 75
Mike Jackson	16		4. 80	Alfred Johnson	335¾		134. 30
Alexander Douglas	3, 190		1, 178. 90	D. McNamara	128		72. 00
Robert Williams	3, 124		976. 25	John Gleason	136		76. 50
Isaac Hamilton	1, 908		596. 25	B. A. Ver Nooy	112		21. 00
Geo. H. Polton	2, 470		988. 00	Richard Colston	96		18. 00
Geo. W. Cross	2, 471		988. 40	Farley Thornton	88		16. 50
L. T. Jewett	2, 671		1, 068. 40	Jas. F. Kersey	84		33. 60
S. W. Baxter	2, 456		926. 40	Jos. McCullum	184		103. 50
M. T. Lincoln	2, 398½		1, 214. 37	M. Sullivan	144		81. 00
W. H. Tapley	3, 280		1, 640. 00	H. H. Lazelle	2, 811		702. 75
John Kolcher	94		37. 60	J. McMullin		330½	743. 62
John Horning	2, 702½		1, 081. 00	D. A. Babcock		351	789. 75
B. W. Pinckney	1, 107½		276. 87	John Cook		372	827. 00
C. H. Wash	1, 870½		467. 62	Felix McGloin	962	22	290. 00
John A. McKelvey	2, 669		1, 192. 50	Wm. Avis		353½	794. 25
James M. Ober	771		308. 40	F. P. Wood		135½	304. 31
David McKenzie	872		348. 80	Geo. W. Elam		359	807. 75
Wm. Trounse	2, 272		908. 80	Patrick Crowley		217	488. 25
H. F. J. Drake	240½	276	1, 683. 20	J. M. Carr	248	8	80. 00
J. L. Kennedy	2, 207½	37	1, 316. 50	F. A. Hoping		333½	750. 37
Oscar Alexander	1, 972		493. 00	M. Joseph		18	40. 50
C. H. Wilson	2, 558½		639. 62	Charles P. Platt		246	553. 50
W. H. Maxwell	2, 426		902. 15	Wm. C. Riley		207½	467. 30
McClellan Jones	1, 026		425. 05	M. T. Forrester		370	833. 75
Alfred Turner	381		156. 20	R. W. Simmons		341½	543. 37
Geo. Johnson, jr.	202		88. 90	Wm. H. Murphy		355½	801. 06
F. A. Cogswell	2, 032½		837. 52	Geo. O. Burke		359	807. 75
N. M. Lathim	1, 774½		443. 62	Hiram Spear	2, 480	1	870. 25
Kate A. Cheatham	1, 774½		709. 80	Jas. H. Stewart		282½	635. 06
C. A. Howle	1, 787		784. 30	Henry Martin		246½	553. 64
Henry H. Day	1, 824½		456. 12	H. B. Littlefield		51½	128. 75
Ralph Pomeroy	57		25. 65	D. B. Whitmore		353	794. 25

No. 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK—cont'd.				TIME WORK—cont'd.			
Arthur Kelley.....	868½		\$162.84	E. W. Godwin.....	1,740½		\$435.12
Frank Gilliam.....	812½		203.11	T. Keefe.....	1,841		460.25
J. La C. Rodier.....	1		.40	Jannette E. Wilson....	192		48.00
Henry W. Weber.....	4		1.60	Lottie Seufert.....	2,374		593.49
Geo. A. Tracy.....	352		176.00	T. A. Haskell.....	1,711		427.75
Chauncey Winne.....	894		223.50	R. Somerville.....	2,208		552.00
Carroll Harbaugh.....	2,487½		527.09	Jennie Robinson.....	2,015½		503.87
S. H. Herman.....	144		57.60	M. J. Billings.....	1,474		368.50
I. H. Sternberg.....	200		80.00	Minnie Wetzel.....	2,226½		556.62
J. C. Euler.....	317½		127.00	Carrie J. Isham.....	2,311½		479.20
Geo. A. Rinehart.....	217½		87.00	Mary G. A. Hunter.....	2,412		482.40
Jas. E. Reese.....	414½		239.48	Myra A. Baxter.....	2,304		561.40
Wm. D. Sullivan.....	382		152.80	Emma Green.....	2,536		507.20
Martin N. Evans.....	1,740½		697.80	George Fordham.....		313	1,669.33
Jno. O. Honey.....	956		382.40	Geo. W. Nichols.....	2,111½		739.01
H. E. Springer.....	202½		127.76	E. P. Getchell.....	1,851½		555.45
E. H. Ryan.....	257½		103.00	C. A. Rice.....	2,488½		746.55
W. H. Hickman.....	935	181	1,527.55	Belle Gates.....	1,264		315.98
T. F. Tuohy.....	36½		19.94	John W. Hayes.....	1,848		462.00
Aven Pearson.....		207	1,235.50	Thos. Shelton.....	1,677		419.25
Robert C. Martin.....	2,207½		551.87	G. C. Mason.....	2,427		606.75
Thos. B. Penicks.....		313	1,799.75	Jesse Jones.....	2,458		614.50
F. C. Oberhaltz.....		256½	1,025.50	Wm. D. Foos.....	1,995		722.40
Jos. Isaacs.....		14	56.00	A. T. Abell.....	2,426		970.40
W. I. Hutchins.....	1,341		536.40	Geo. W. Folck.....	1,154½		401.07
Andrew Taff.....	1,438		575.20	J. J. Verser.....	1,338		468.29
Chas. T. Carroll.....	96		33.60	Robert Woolfolk.....	504		126.00
Daniel Wathew.....	192		76.80	J. T. Roach.....	40		10.00
J. Harries.....	2,420		907.50	Harvey L. Maddox.....	186		46.50
Frederick Otto.....	96		33.60	Robert L. Fearson.....	2,614		763.25
W. L. Bridges.....	192		67.20	John Johnson.....	2,218½		561.02
John W. Ryan.....	8		2.00	Jas. Keogh.....	261½		65.37
H. S. Darby.....	248		62.00	Nathaniel Halley.....	487		121.75
B. F. Oder.....	2,597		973.80	J. E. Waugh.....	462½		115.61
John F. Hogan.....	1,802		544.40	Geo. W. Schroyer.....	257		64.25
Henry C. Watson.....	1,875		646.25	Robt. W. Brown.....	2,358		589.50
W. H. Berry.....	831		249.30	E. W. Williams.....	1,662½		416.59
Charles A. Pope.....	266		79.80	Wm. Bierly.....	3,057½		944.68
Wm. J. Rountree.....	168½		420.37	V. D. Perry.....	160		40.00
S. T. Satterfield.....	1,865		466.25	Jos. Randall.....	2,502½		625.62
James W. Elms.....	316		79.00	H. C. Wilson.....	48		12.00
R. E. Scott.....	1,528		382.00	Ellen Handebeau.....	2,138		534.50
G. Kern.....	320		80.00	H. C. Schreiner.....	1,703		425.75
Thomas Makin.....	426		106.50	James Doyle.....	1,852½		642.77
A. H. Davis, jr.....	264		66.00	Mary R. Biggins.....	1,031		257.75
J. T. Whitaker.....	2,562		640.50	D. McCathran.....	2,239½		783.82
Wm. Shepherd.....	1,508	182½	827.22	S. K. Coster.....	1,056		314.00
Henry Masterson.....	488		122.00	Noble Spates.....	56		14.00
James Kernan.....	1,717		429.25	Agnes Landrigan.....	1,406		351.50
Thos. Flannagan.....	265		66.25	J. W. Dutton.....	2,205		652.30
J. G. Savage.....		5	11.25	Geo. M. Raub.....	2,659		731.75
J. E. Clifford.....		335	753.75	Harry McMonigal.....	2,205		551.25
Geo. O. Barker.....		11½	26.72	Henry McEnroe.....	1,584		396.00
Alex. McDonald.....	2,608½	6	665.80	John Cowgill.....	1,970		492.50
J. H. Strickland.....		1½	4.21	Samuel Wilkinson.....	1,277	32	399.25
Lindsay Morrison.....		194½	437.91	S. P. Heinline.....	1,221½		352.35
Samuel Robinson.....	2,526	3	819.24	E. B. Welborn.....	2,211½		641.75
P. G. Hallinan.....		47½	107.44	Geo. D. Spillman.....	2,054	121	837.62
Benj. Polglase.....		184½	414.56	John F. Toole.....	1,868		495.10
J. L. Holloway.....		284½	640.68	N. M. D. Lathrop.....	2,036		508.99
H. P. Marston.....		313	782.50	M. A. Harper.....	2,019½		504.87
J. W. Prather.....	2,213		553.25	M. D. Anderson.....	1,949½		487.37
F. W. Conover.....	1,901½		760.40	M. Fleming.....	1,760		440.00
Clara B. Harrison.....	2,285		914.00	E. J. Harper.....	1,644		411.00
L. Rogier.....	160		40.50	A. A. West.....	1,616		404.00
M. E. Speiser.....	2,210		552.50	Lizzie W. Gray.....	1,628		407.00
V. M. Evans.....	1,810½		452.62	L. H. Davis.....	1,909½		477.12
S. Hess.....	1,693		423.25	A. Hughes.....	1,076		269.00
M. V. Purdy.....	2,129		532.25	Alice Martin.....	711		177.75
Julia Callahan.....	285		71.25	Lena Dement.....	1,747½		436.87
Mary E. Wilson.....	213		53.25	Benjamin T. Thorn.....	1,808		452.00
M. A. Clancy.....	2,482		620.50	Vincent L. Adams.....	1,516	29	444.24
A. Collins.....	2,261		565.25	M. C. Hood.....	1,568		392.00
Dora C. Reicks.....	1,199		299.75	I. R. Ellis.....	1,601½		400.37

No. 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK—cont'd.				TIME WORK—cont'd.			
Owen Ardinger	1,723	.....	\$430.75	W. J. White	919½	.....	\$367.80
J. E. Smith	1,748	.....	437.00	S. Martin	2,017	.....	463.91
W. H. Triplett	1,432	.....	447.37	John T. Heck .....	.....	301	1,730.75
Augustus Schwartz	450	.....	135.00	C. E. Hall	2,301	.....	1,219.53
Wm. A. Boyd	1,565	.....	391.25	J. R. Lamson	2,500	.....	1,125.00
Edward Welsh	1,333	.....	333.25	John T. Brewster	2,143	.....	857.20
Harry C. Jenkins	1,619	.....	404.75	John W. Clark	2,290½	.....	916.20
A. S. Defrees	2,100	.....	706.00	M. Piggott	2,350	.....	940.00
T. D. Casey	912	.....	342.00	J. N. Steed	2,185	.....	874.00
John W. Hays	1,217	.....	304.25	R. E. King	2,110½	.....	844.20
Michael Keebler	1,520	.....	380.00	Will A. Miller	2,245	.....	898.00
Rose E. Dooley	1,235	.....	247.00	F. W. Follett	2,055½	.....	822.20
C. N. Buckland	2,211	.....	612.99	Wm. Stake	2,448	.....	979.20
Walter Grandy	1,065	.....	266.25	O. H. Reed	2,353½	.....	941.40
Annie Leavy	1,471½	.....	294.30	Rosa R. Weser	2,236	.....	469.56
Arthur T. Canisius	1,424	.....	435.37	Etta Davisson	2,277½	.....	478.27
D. D. Marsh	669	.....	167.25	Bettie Schiller	2,390	.....	501.90
H. A. Gwin	1,729	.....	626.17	M. A. Proctor	1,782½	.....	374.32
Mary E. Walsh	590½	.....	147.62	M. A. Silvers	2,170	.....	455.70
W. F. Webster	1,119	.....	447.60	George W. Pocock	2,260	.....	690.80
R. A. Gray	2,019½	.....	514.07	W. H. Moss	2,147	.....	858.80
Israel Moredick	1,220½	.....	350.12	Lucy Shannon	1,345	.....	282.45
S. E. Jackson	1,142½	.....	285.62	Emma Hager	2,440	.....	451.40
Ella Mitchell	1,293	.....	324.50	John R. Rossell	249½	.....	99.80
John McKenna	2,325½	.....	476.78	Rose Brigazzi	2,063½	.....	433.33
D. C. Hathaway	812½	.....	203.00	Samuel Gamble	2,246	.....	654.10
Mattie Fitness	989	.....	247.25	S. S. Payne	992	.....	248.00
Harvey E. Taylor	67	.....	19.60	Chas. B. Walters	717½	.....	199.22
John Talbert	1,016	.....	254.00	H. K. Collins	2,247	.....	1,123.50
G. L. Austin	968	.....	387.20	E. M. Willard	1,640	.....	410.00
J. S. Randall	2,207½	.....	881.80	Geo. A. R. McNeir .....	.....	313	1,799.75
Chas. P. Reamy	248	.....	62.00	C. B. Hough	2,504	.....	1,327.12
John W. Pomeroy	806	.....	201.50	Wm. H. Bushnell	1,144	.....	572.00
S. H. Lashley	779	.....	194.75	H. L. Stimson	264	.....	139.92
Katherine Lackland	749	.....	187.25	Frank Valee	2,324	.....	929.60
Mary C. Curtis	795	.....	158.00	T. P. Elliott	597	.....	298.50
V. Henrick	198	.....	46.50	J. T. Kavanagh	52	.....	23.40
W. F. Kimmell	651	.....	162.75	D. C. Leahy	740	.....	296.00
Geo. F. McInturff	1,878	.....	485.35	J. L. Alverson	264	.....	105.60
Eugene Sullivan	340½	.....	85.12	E. D. King	2,385	.....	954.00
Mamie Russell	365	.....	91.24	Arthur F. Maher	2,260	.....	904.00
John E. Walsh	2,502	.....	1,000.80	A. B. Proctor	2,514½	.....	1,005.80
Geo. E. Pyemont	2,294	.....	917.60	M. Q. Jackson	216	.....	86.40
Chas. Wade	88	.....	35.20	Jno. A. Behrle	46	.....	18.40
Kate L. Schlegel	2,536½	.....	532.66	C. M. W. Earle	936	.....	374.40
Pauline Turnburke	2,540	.....	533.40	Chas. L. Blanton	906	.....	362.40
Mary Wise	2,440½	.....	512.50	J. C. Spencer	651½	.....	302.81
Emily Plunkett	2,338	.....	490.98	W. R. Baum	595	.....	238.00
Ida Van Arsdale	2,267½	.....	476.17	H. D. Lowd	2,310	.....	924.00
Maggie McCarthy	2,316½	.....	486.46	L. B. Cooley	494	.....	197.60
Lizzie Fayman	1,993	.....	418.53	H. J. Gaylor	2,327½	.....	931.00
A. Holland	2,445	.....	757.95	Edward Y. Fisher	2,490	.....	996.00
Carrie T. Shelton	60	.....	13.80	Alex. T. Borland	2,581	.....	1,032.40
Nellie S. Manly	96	.....	22.08	Daniel Dougherty	243	.....	128.79
Lizzie Tucker	2,501½	.....	575.34	P. S. Sprightley	2,564	.....	1,025.60
I. W. Busey	508	.....	127.00	C. E. Meacham	2,424	.....	969.60
Henry Lehman	2,677	.....	669.25	M. Hunt	2,620	.....	1,048.00
Vincent Lemmon	2,552	.....	638.00	Wm. O. Engler	2,670	.....	1,068.00
Jesse Smith	2,492	.....	633.00	Geo. Griffith	2,404	.....	961.60
William A. Smith	394	.....	98.50	Chas. A. Williams	2,323	.....	929.20
E. W. Hudson	498½	.....	124.62	Geo. Siggers	2,158	.....	863.20
Kate Haney	2,233½	.....	513.70	Mary Keicher	2,304	.....	432.00
Nellie Black	857½	.....	197.22	Mollie Seidell	805½	.....	151.03
H. P. Taylor	2,570½	.....	1,303.56	C. C. Gibbons	2,568	.....	539.28
Annie Kelly	2,690½	.....	565.00	C. A. Hopkins	707½	.....	148.57
E. J. Russell	2,365½	.....	1,541.38	Bettle Pumphrey	1,524	.....	320.04
Arthur McCafferty	2,422	.....	925.60	Emma Mollero	2,092½	.....	439.42
G. Webster	146	.....	33.58	Kate C. Kersey	2,225½	.....	467.35
A. Dutrow	225	.....	51.75	M. E. Fendrich	2,523	.....	529.83
Katie Sage	556	.....	116.76	Mary T. Hodgkin	2,226	.....	467.46
Mary Mills	1,956	.....	410.76	H. C. Bayley	2,006	.....	802.40
John H. Burch	2,461½	.....	985.80	James Q. Dutrow	943	.....	377.20
F. Pope	273	.....	62.79	Chas. Kofer	2,604	.....	1,041.60

No. 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK—cont'd.				TIME WORK—cont'd.			
Wm. M. Belt.....	2,534		\$1,115.65	Camilo Padilla.....	1,613½		\$734.95
Edw. J. Fallon.....	432		172.80	M. R. Woodward.....	2,533		1,514.64
A. A. Allison.....	68		27.20	C. K. Weller.....	2,481½		1,107.44
J. L. Dowling.....	1,375		316.25	C. W. Millet.....	2,422		968.80
John P. Boydon.....	788		197.00	Chas. H. McAuliffe....	1,664½		665.80
J. B. Outlaw.....	2,000½		500.12	G. Warnke, jr.....	1,601½		640.60
Rosie B. Walsh.....	1,913½		440.10	N. M. Light.....	2,246		938.20
Pliny E. Lusby.....	1,987		496.75	D. L. Sandoe.....	1,570½		740.23
Catherine G. Powers..	1,773		407.79	Philip Nachman.....	2,400		960.00
Albert K. Mundheim..	2,438		1,187.82	W. H. Sweeney.....	2,771½		1,108.60
J. W. Rowan.....	2,036½		878.84	W. L. Pierce.....	1,511		614.37
A. M. LeMerle.....	1,792		716.80	S. F. McBride.....	1,634		653.60
R. B. Smythe.....	188		75.20	Edward W. Searfoss...	1,309		523.60
G. T. Gosorn.....	1,619		647.60	F. H. Melick.....	2,344½		937.80
Wm. F. Watson.....	1,311½		327.87	Lit Terry.....	1,771		708.40
Mary B. Roberts.....	350		80.50	C. C. Brodie.....	1,843		737.20
F. J. Ward.....	1,997		864.32	John Buckman.....	2,342½		585.60
E. H. Burch.....	52		20.80	H. C. Saunders.....	1,094		273.49
Ed. Payne.....	1,519		607.60	Timothy O'Sullivan....	2,446½		978.60
C. W. Graff.....	152½		61.00	J. C. Wilson.....	2,240½		896.20
Z. T. Jenkins.....	1,532		612.80	J. G. McGrath.....	2,183		873.20
Ella McGraw.....	2,128		446.88	Geo. McCutcheon.....	1,486½		594.60
Rosa Blush.....	239½		50.29	J. Polk.....	2,195		878.00
Mary C. Steele.....	1,767		371.07	J. Latham Shober.....	1,551		620.60
N. H. Shipman.....	1,172		468.80	W. F. P. White.....	2,340½		936.20
Florence Roberts.....	1,257		289.11	J. R. Hinchcliffe.....	528		211.20
Agnes M. Arnold.....	1,132		237.72	Fred. W. Gardner.....	918½		367.40
Mary A. Law.....	977½		391.00	Chas. W. Irey.....	900		360.00
Mamie T. Hayden.....	998½		399.40	G. W. Shaffer.....	915½		366.20
Geo. A. Whitford.....	2,504		1,176.80	George N. Coe.....	887½		355.00
Chas. E. Taylor.....	391		156.40	Daniel Miller.....	962½		385.00
Fannie R. Smith.....	423		97.29	C. M. Bender.....	829		331.60
Ign's M. Knott.....	2,360		944.00	Frank H. Hambright..	661½		264.60
Rosie H. Stoll.....	484		111.32	Richard N. Mattox....	968½		387.40
Thomas Childs.....	216		86.40	Geo. M. Godfrey.....	688		275.20
Kate H. Montfredy....	2,327		581.75	E. N. Bunker.....	851		340.40
G. A. Lyon.....	2,504		1,001.60	A. Craig.....	822		328.80
John Matthews.....	2,291		916.40	Walter Gillrup.....	964½		385.80
Samuel Kooockogey...	2,283½		913.00	L. Johnson.....	909		363.60
E. G. Proctor.....	2,353½		588.37	W. M. Hamilton.....	733½		293.40
S. S. Barrett.....	312		124.80	W. A. Lavelette.....	2,465		1,259.38
L. Piggott.....	2,453		613.25	Augustus L. Roberts...	2,171½		1,150.89
L. Gaughran.....	2,472½		568.67	W. F. Bunnell.....	367½		147.00
Chas. Heffernan.....	2,464		985.60	Daniel I. Hahn.....	709		132.93
A. D. Stidham.....	2,281½		912.60	Daniel N. Prosser.....	575½		230.20
Annie Callahan.....	2,410		500.90	C. G. Probert.....	598		239.20
S. W. Lewis.....	2,490½		996.20	Alexander J. Watson...	520		208.00
Geo. S. Britt.....	2,503½		1,001.40	Bertt H. Brockway....	611		244.40
W. A. Ball.....	478½		191.40	Edwin C. Jones.....	572		228.80
P. P. Orth.....	490½		196.20	James F. Kirkpatrick..	417½		167.00
W. F. Councell.....	503½		201.40	Geo. W. Wetmore.....	618		247.20
N. H. Lytle.....	518½		207.40	J. V. Verity.....	419		167.60
A. E. Grinnell.....	240		96.00	Geo. J. McQuaid.....	495		198.00
Thos. E. Norris.....	104		41.60	P. J. Power.....	384		153.60
F. A. Sullivan.....	2,431½		455.87	Arthur Hamilton.....	418		167.20
Isabel C. Rockwood...	773½		145.02	Chas. S. Bastian.....	2,479		911.60
Lucy V. Ruby.....	823		189.29	E. J. Hall.....	378		151.20
R. J. Wilson.....	2,035		818.00	Carrie A. Bartlett.....	725		166.75
Sallie L. Hawken.....	614		141.22	E. J. Essex.....	624		143.52
Sarah A. Connell.....	624		249.60	Edward Beyler.....	576		230.40
W. F. Kenyon.....	637		254.80	George Henning.....	531½		212.60
Upton S. Howser.....	2,752	3¼	696.44	Alice Burns.....	542½		135.62
Elise Burgy.....	317½		66.67	Wm. R. Adams.....	584		146.00
Wm. J. Harris.....	1,848		742.80	R. W. Wade.....	511		204.40
Jerry A. Lee.....	2,704½		1,121.80	T. G. Ingram.....	511½		127.87
Fannie Lavine.....	192		44.16	John O'Reilly.....	240		96.00
R. E. Edmondson.....	88		35.20	H. A. Scheuerman.....	416		166.40
L. W. Koon.....	1,469½		587.80	C. C. Covert.....	415		166.00
J. W. Leech.....	1,084		433.60	W. H. Nalley.....	311½		124.60
Theo. Ray.....	1,576½		630.60	Fred E. Weber.....	386		154.40
Remy Lefranc.....	1,106½		586.43	J. E. Johnson.....	362		90.49
Wm. H. McFadden.....	2,161½		1,145.57	Alice M. Rocheford...	314½		78.62
Chas. E. Young.....	2,266		1,200.94	M. Kinsella.....	248		57.04
W. C. Lambert.....	2,242½		897.00	Ida P. Belcher.....	247		56.81

No. 29—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK—cont'd.				TIME WORK—cont'd.			
Florence E. Senner.....	72	.....	\$16.56	P. Sinclair.....	1,664	.....	\$624.00
Edwin Walmsley.....	2,708 $\frac{1}{2}$	.....	1,337.45	W. H. Carson.....	1,603	.....	400.87
Sallie E. Michael.....	2,374 $\frac{1}{2}$	.....	597.68	J. C. Hunter.....	1,128	.....	564.00
Mollie E. Farnsworth.....	24	.....	5.52	Noah Dillard.....	1,021	.....	255.25
Carrie V. Sewall.....	24	.....	5.52	Joseph Plumer.....	150	.....	37.50
H. S. Weyand.....	1,582	.....	782.23	Joseph Comer.....	322	.....	80.50
H. T. Schildrath.....	774 $\frac{1}{2}$	.....	309.80	Daniel Morris.....	176	.....	44.00
Daniel O'Connell.....	1,560 $\frac{1}{2}$	.....	624.20	W. H. Nelson.....	152	.....	38.00
A. R. Waite.....	1,555	.....	622.00	John A. Gleeson.....	.....	371	1,113.00
W. H. Livermore.....	2,789 $\frac{1}{2}$	.....	1,278.47	James Lee.....	.....	371	927.50
R. H. Kirk.....	2,268	.....	997.20	Daniel Keys.....	120	.....	30.00
P. J. Sheahan.....	1,953 $\frac{1}{2}$	.....	366.25	J. H. Snapp.....	890	.....	222.50
Robt. M. Smith.....	1,571	.....	628.40	James H. Roberts.....	.....	371	927.50
Emilio Millancey.....	1,602 $\frac{1}{2}$	.....	641.00	J. W. McMahon.....	1,185	.....	300.25
T. S. Slentz.....	1,601	.....	721.83	Robt. Hunter.....	200	.....	40.00
C. B. McCann.....	1,507	.....	602.80	Charles E. Clark.....	1,880	.....	470.00
Wm. C. Stocks.....	1,427	.....	571.00	Frank Rowe.....	3,518	.....	879.50
J. C. Shinnen.....	1,751	.....	700.40	Jas. A. Lee.....	1,784	2	450.50
W. W. Williams.....	1,021	.....	408.40	William Madden.....	2,504 $\frac{1}{2}$	.....	641.12
Guy W. McCord.....	1,207 $\frac{1}{2}$	.....	483.00	M. C. Mulvihill.....	112	.....	28.00
A. G. Naylor.....	1,322	.....	528.80	A. B. O'Meara.....	72	.....	18.00
James H. Ross.....	2,216	.....	1,062.05	W. Frisby Anderson.....	128	.....	32.00
Wm. M. Davis.....	161	.....	64.40	John Better.....	1,642 $\frac{1}{2}$	.....	410.62
Chas. Jordon.....	1,515 $\frac{1}{2}$	.....	376.61	Sam. E. Sinkfield.....	2,356	.....	589.00
W. L. Schmalhoff.....	2,305	.....	1,221.54	W. H. Bowman.....	2,274 $\frac{1}{2}$	.....	568.62
W. R. Johns, jr.....	1,599	.....	804.67	Jas. McKenna.....	2,426	13	635.75
A. W. Bentz.....	1,483	.....	598.60	Wm. A. Reinberg.....	2,356	.....	589.00
W. A. Mitchell.....	2,313 $\frac{1}{2}$	.....	1,071.02	J. S. Kelly.....	1,408	.....	352.00
W. W. Matthews.....	979	.....	391.60	Thos. Conway.....	1,258	.....	339.42
A. L. Stipe.....	80 $\frac{1}{2}$	.....	323.40	Lewis Jackson.....	2,244	.....	561.00
Frank D. Rogers.....	1,418	.....	725.66	Wm. Moody.....	2,186	.....	546.50
J. L. Thompson.....	977 $\frac{1}{2}$	.....	391.00	Wm. Bush.....	1,069	172	697.25
Geo. Luskey.....	1,106	.....	276.50	John Fitzgerald.....	1,844	.....	460.99
W. Rotenbury.....	1,372	.....	343.00	Wm. Corbin.....	432	.....	108.00
M. H. Core.....	1,265 $\frac{1}{2}$	.....	291.06	W. C. Long.....	560	.....	140.00
Felix Letts.....	1,562 $\frac{1}{2}$	.....	625.00	George Vogt.....	1,016	.....	254.00
Mary J. Phillips.....	1,639 $\frac{1}{2}$	.....	409.87	Grant Saxton.....	813	.....	203.25
Carrie Hilburn.....	1,539	.....	353.97	Pierce Britt.....	.....	109	270.50
Chas. F. Wilson.....	2,389 $\frac{1}{2}$	.....	745.13	Geo. L. Peoples.....	704	.....	176.00
A. J. Morton.....	1,738 $\frac{1}{2}$	.....	388.72	J. B. Matthews.....	542	.....	135.50
A. L. Tilghman.....	1,476	.....	367.24	Joseph Salt.....	520	.....	130.00
Mary C. Manning.....	2,238 $\frac{1}{2}$	.....	477.26	Martin McNamara.....	512	.....	128.00
Georgie V. McGill.....	1,443 $\frac{1}{2}$	.....	332.00	John H. Hargett.....	8	.....	2.00
Emily Davies.....	1,565	.....	386.63	John McComb.....	409	.....	153.37
F. Baker.....	1,450 $\frac{1}{2}$	.....	333.61	W. C. McLeod.....	859	.....	240.52
Wm. A. Howlett.....	1,541 $\frac{1}{2}$	.....	616.16	John Ryan.....	2,267	.....	634.76
Margaret McNally.....	1,922	.....	472.26	Walter Bradshaw.....	212	.....	53.00
Geo. R. Price.....	1,671	.....	417.75	Patrick Bowie.....	502	.....	125.50
James L. Purcell.....	928	.....	338.75	Benj. Davison.....	566	.....	174.19
Jno. E. Knight.....	1,411 $\frac{1}{2}$	.....	564.60	T. Spriggs.....	2,508	.....	627.00
Martin Miller.....	1,291 $\frac{1}{2}$	.....	516.60	R. D. Goodman.....	2,788 $\frac{1}{2}$	.....	697.11
Gale Sherman.....	1,425	.....	570.00	Willard Hobbie.....	2,328	.....	582.00
Bessie Rowson.....	1,353 $\frac{1}{2}$	.....	311.30	Simon Booker.....	1,359	.....	339.87
Horace C. Dowling.....	1,214 $\frac{1}{2}$	.....	485.80	W. L. Hinds.....	.....	296	1,610.24
J. A. Hamilton.....	756	.....	173.88	W. P. Bullock.....	2,509	.....	702.52
W. J. Simmons.....	.....	313	1,643.25	Wm. Crawford.....	1,098	.....	274.50
R. C. Lappin.....	1,057	.....	528.50	A. M. Dewey.....	.....	292 $\frac{3}{8}$	1,461.87
Geo. E. Patten.....	.....	299 $\frac{3}{8}$	1,397.07	T. E. Shields.....	1,829	.....	672.87
J. B. Ver Nooy.....	464	.....	185.60	R. H. Betts.....	.....	139 $\frac{7}{8}$	500.75
John W. Jones.....	2,840 $\frac{3}{8}$	.....	852.15	Hiram Kibby.....	2,550	.....	1,275.00
John F. Gates.....	192	.....	57.60	A. A. Bundy.....	2,617 $\frac{1}{2}$	.....	1,265.05
David Hickey.....	1,878	.....	562.40	M. A. Davis.....	1,962 $\frac{1}{2}$	.....	713.36
Wm. Dawson.....	2,467	.....	616.75	J. O. Havens.....	2,866 $\frac{1}{2}$	.....	973.12
John Miner.....	2,505	.....	626.25	J. H. B. Smallwood.....	2,707 $\frac{1}{2}$	.....	809.55
C. M. Morrison.....	2,589	.....	647.25	Thomas Brown.....	2,141	.....	535.25
W. C. Martin.....	1,814 $\frac{1}{2}$	.....	544.35	John C. Wright.....	2,630	.....	657.50
John Dice.....	3,002	.....	750.50	Ellis Hughes.....	2,238	.....	895.20
Louis Alexander.....	16	.....	4.00	Robert E. Gayle.....	2,245	.....	898.00
R. H. Jolly.....	2,102	.....	533.00	John N. Dorster.....	2,749	.....	757.63
Benj. J. Davis.....	245	.....	61.25	Jos. McCullum.....	343	.....	192.92
John A. Davis.....	2,235	9	770.66	B. W. Fair.....	49 $\frac{1}{2}$	.....	12.37
D. E. Ritchie.....	2,070	.....	742.12	Martin Mahoney.....	24	.....	3.50
J. W. Powell.....	.....	249	1,161.99	Hazard Wheeler.....	2,065	.....	826.00

No. 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK—cont'd.				TIME WORK—cont'd.			
F. M. Bumpus	2, 678½		\$674.54	C. R. McDonald	2, 487½		\$621.87
Isaac Hatton	1, 608		401.99	E. T. Barrett	2, 321		1, 230.13
John J. McCollan	56		31.50	Jos. C. Kauffman	2, 302½		1, 115.07
J. L. McCloskey	29		16.31	Jas. Austin	2, 268		934.60
P. McNamara	155		87.19	Jos. A. Madden	457		182.80
Moses Foskey	2, 489½		622.36	G. W. Newell	1, 436		564.40
Ed. McCallum	68		38.22	Thomas M. Brower	1, 069		427.60
Henry Traine	18½		7.40	L. G. Jeffers	375½		150.20
Garland H. White	147½		36.87	Jas. E. Frost	257		96.96
Thomas Lewis		313	939.00	Theo. Hodes	2, 396		1, 269.88
Thomas Peter	2, 115		528.75	John R. Morrison	2, 067		826.80
James Carroll	2, 400		600.00	J. L. Sinn	785		314.00
N. A. Colbert	2, 117½		529.37	S. K. Young	198½		79.40
Patrick J. Rogers	371		69.56	J. R. McBride	2, 171½		1, 138.41
C. H. Kasson		183	564.00	R. C. Wilson	1, 526		808.78
F. D. Casey	666		166.50	A. McNelly	2, 239		1, 451.95
Wm. H. Chew	1, 637		409.25	Thos. Collins	2, 625		656.24
W. P. Bell	2, 329		582.25	Henry Knowles	2, 332		932.80
Fred. Southwell		115	402.50	Geo. S. Kauffman	137½		55.00
E. W. Oyster		27	155.25	R. H. Campbell	204		81.60
John S. Mills	1, 171½		622.75	Alex. McDonald	8		2.00
J. S. Zeigler	2, 243		1, 188.79	L. H. Jullien	1, 899½		996.11
S. H. Bell	2, 318		1, 228.54	T. F. Herring	76½		40.54
John R. Bradley	2, 447½		1, 287.17	A. J. Hall	34½		18.28
W. A. Dodge	2, 420		1, 282.60	T. M. Sullivan	1, 844½		737.60
A. P. Marston	2, 442½		1, 294.51	W. A. Taylor	1, 854		741.60
C. X. Martin	2, 055		1, 089.15	J. T. Lewis	2, 085½		521.37
John G. Anderson	319½		169.33	Geo. R. Brandon	1, 757		878.50
Chas. A. Morgan	2, 203½		1, 218.42	H. Y. Brooke	576		230.40
A. R. Platt	1, 807		957.70	C. M. Cyphers	2, 162½		1, 301.95
J. A. Scott	2, 279½		1, 208.12	E. H. Thomas	2, 064		1, 065.19
F. B. Wallace	2, 555		1, 354.15	E. Toner	99½		44.41
J. P. Morse	2, 506½		1, 328.43	W. J. Galbraith	46		23.34
Geo. J. Schley	600		318.00	Katie Magee	1, 429		328.67
Chas. W. Baker	2, 311		1, 155.00	J. W. Haslett	1, 252		500.80
S. N. Benerman	504		252.00	Florence M. Harris	1, 337½		309.62
Byron A. Ford	2, 453		1, 226.50	Ellen F. Sydnor	1, 280		294.40
E. L. Scott	2, 517		1, 258.50	Ann E. Gross	1, 712½		393.87
G. W. Graham	2, 342½		1, 054.12	V. M. Roy	1, 410½		622.60
Wm. E. T. Greenfield	395½		177.97	Zulie Thompson	1, 377		258.19
M. W. Barr	1, 484½		593.80	Maggie McDonald	1, 239½		309.87
E. B. Chambers	2, 408		1, 249.99	Geo. K. White	1, 175½		470.20
F. W. Carlisle	666½		266.60	Annie Hurley	24		5.52
J. J. Davies	401		160.40	Mabel E. Morrill	1, 236		285.70
J. W. Garrett	607½		243.00	Maggie E. Swan	1, 181½		271.74
W. A. Linton	2, 266		906.40	Emma E. Miller	1, 140		262.20
J. W. Metzung	2, 319		927.60	John B. Smithers	1, 047½		419.00
H. T. B. Moy	2, 521		1, 008.40	Fred. W. Hodges	1, 135		324.87
J. V. R. Towers	2, 436½		974.60	Rosalie Jones	1, 033		255.29
Robt. H. White	353		141.20	Benj. Pyne	823½		329.40
Wm. L. White	2, 796		1, 435.96	Mary C. Durham	2, 295		430.30
Geo. B. Atkinson	2, 164½		865.80	Alex. R. Bane	651½		260.60
Wm. H. Boseley	2, 112		844.80	George B. Van Heuren	148		37.00
Wm. E. Coleman	634		253.60	Jas. Breen	2, 345		1, 102.15
W. A. De Groot	2, 404½		961.80	Chas. A. Krause	1, 912		669.20
J. A. Gibbs	2, 493½		997.40	J. S. Smith	8		3.76
J. S. Gourlay	2, 362		944.80	F. P. Lewis	1, 161		464.40
H. B. Grigg	610		256.00	David Shaw	368		147.20
C. L. Griffin	2, 393½		971.37	J. H. Bassett	251		100.40
C. H. Hay	2, 030		812.00	E. Finley Kitson	1, 126		545.72
Simeon Johnston	2, 456		982.40	Alfred Davis	1, 264		505.60
D. G. Miller	714½		285.80	J. T. Roberts	1, 218		487.20
W. T. Priddy	1, 869		747.60	X. W. Jackson	1, 144		289.23
Emmett B. Russell	252½		101.00	A. P. Beatty	1, 445		578.00
H. C. Shearer	2, 449½		979.80	J. R. Smeltzer	1, 290½		516.20
A. Stiarwalt, jr.	2, 460		984.00	C. A. Bartlett	1, 179½		471.80
F. P. Wilkins	2, 348		939.20	Edwin V. Frey	1, 184½		473.80
H. L. Work	72		28.80	J. D. Simmons	1, 040½		416.20
L. K. Zook	2, 208		663.20	H. D. Jarrard	1, 140½		456.20
W. E. Post	2, 315		926.00	Jno. W. Michael	1, 217½		487.00
Raymond F. Crist	2, 561½		596.65	Ellsworth Law	1, 137		454.80
Geo. Dunnington	2, 564½		641.11	John E. Doherty	685½		274.20
W. H. Pickleheimer	2, 443		610.75	Will P. Roach	1, 094½		437.80

No. 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK—cont'd.				TIME WORK—cont'd.			
Wilson M. Barber.....	1,263	.....	\$505.20	Mary Elliott.....	2,353	.....	\$552.25
Edgar Holzer.....	1,261	.....	504.40	Susie E. Johnson.....	1,538	.....	384.50
Wm. M. Leavitt.....	1,238½	.....	495.40	Etta Leonard.....	1,616	.....	404.00
J. H. Mowbray.....	935	.....	434.30	M. L. Learned.....	1,616	.....	404.00
G. P. Sloan.....	1,197½	.....	479.00	Reba Morris.....	2,027½	.....	498.62
Henry C. Shook.....	1,072	.....	428.80	S. J. McLeod.....	1,543	.....	385.75
E. D. Smoot.....	1,976½	.....	791.00	Dora Steele.....	1,618	.....	404.50
J. S. Green.....	1,293	.....	323.23	S. D. Soper.....	1,656	.....	414.00
Frank Ayers.....	1,027½	.....	411.00	Katie Snee.....	1,648	.....	412.00
J. M. Craig.....	.....	313	1,643.25	Emma Sweeney.....	1,441	.....	360.25
John R. Boss.....	600	.....	240.00	Ella Vandenburg.....	1,618	.....	414.50
I. Simmonds.....	2,422	.....	968.80	M. Walsb.....	1,655	.....	413.75
R. T. Fahy.....	1,640	.....	656.00	Lillie Ward.....	1,845	.....	453.77
Fred Wilson.....	2,350	.....	940.00	Annie O'Brien.....	228	.....	57.00
C. A. Moran.....	2,502	.....	900.80	M. A. O'Neill.....	289	.....	72.25
Mary Cunningham.....	772	.....	161.12	D. P. Barrington.....	1,483	.....	370.75
Ella Steele.....	1,000	.....	210.00	Annie Ashe.....	1,487	.....	371.75
Bettie E. Grady.....	939	.....	175.98	Katie Polk.....	165	.....	41.25
Frank Scott.....	2,181	.....	546.00	Nellie Cronin.....	1,484	.....	371.00
Geo. W. Howland.....	2,504	.....	1,087.20	Agnes W. Adam.....	1,275	.....	318.75
James J. Ley.....	128	.....	51.20	Wm. P. Reese.....	2,017½	.....	923.20
Robt. H. Marcellus.....	2,504	.....	1,001.60	F. Harleston.....	1,264	.....	316.00
E. A. Vose.....	2,298	.....	528.54	Mary E. Buete.....	1	.....	.25
Victoria Sweeny.....	2,400	.....	552.00	J. Hitchcox.....	1	.....	.25
S. C. Cushing.....	2,008	.....	461.84	Maggie A. Duffy.....	1	.....	.25
Edmund Shaw.....	600	.....	150.00	M. A. Ryan.....	3	.....	.75
Katie Sage.....	1,544	.....	324.24	P. J. Ryan.....	1,117	.....	524.99
Anna Bolingstark.....	2,376½	.....	499.06	Cassie A. Goodman.....	844	.....	211.00
E. Shaw.....	845	.....	338.00	J. A. Dougherty.....	143	.....	37.75
Maria L. Marble.....	152	.....	34.96	A. W. Reynolds.....	2,562½	.....	1,056.20
H. A. Harding.....	.....	313	1,643.25	W. W. Crubaugh.....	1,161	.....	228.43
Chas. T. Hendler.....	2,581	.....	1,307.82	S. W. Stevens.....	565	.....	176.56
Thos. W. Clark.....	2,596	.....	1,064.57	Ida Dodge.....	70	.....	17.50
W. W. Ludlow.....	2,505	.....	1,102.00	James Donahue.....	724	.....	181.62
Wm. F. Bloor.....	2,322½	.....	929.00	Geo. T. Berkeley.....	199	.....	79.60
Charles B. Mellon.....	2,357	.....	942.80	James H. Keys.....	2,345½	.....	592.22
G. Coakley.....	2,348	.....	587.00	E. A. Leonard.....	2,280	.....	524.40
C. N. Travis.....	1,958½	.....	783.40	James Nally.....	1,894	.....	496.82
J. R. McCoach.....	2,414	.....	622.25	Jas. Henri Cromwell.....	101	.....	25.25
Thos. L. Koontz.....	2,471½	.....	988.60	Daniel Murphy.....	1,557	.....	622.80
Innocentia McGill.....	2,484	.....	571.31	Wm. T. Kelly.....	8	.....	2.80
Ronie Elms.....	1,872	.....	430.55	T. T. Burke.....	606½	.....	151.86
M. D. Hamilton.....	1,456	.....	582.40	E. L. Winne.....	2,796	.....	1,118.40
Geo. H. Kerr.....	608	.....	243.20	Geo. Shurland.....	2,225½	37½	568.09
Frank M. Richardson.....	570	.....	228.00	W. P. Chroniger.....	298	.....	74.50
Harvey J. Southwick.....	678	.....	359.33	John M. Kemper.....	2,660½	.....	1,064.20
Geo. C. Ellison.....	761	.....	304.40	J. W. Jones.....	1,218	.....	304.50
H. D. Beach.....	730½	.....	292.20	J. R. Jones.....	20	.....	5.00
W. Marden King.....	2,494	.....	1,121.89	Wm. J. Laing.....	931	.....	372.40
Howard Ferguson.....	705½	.....	282.35	C. F. Overacker.....	820	.....	328.00
J. Willie Butcher.....	192	.....	36.00	Hugh Hayes.....	763	.....	143.04
E. M. Karrott.....	1,003½	.....	420.12	Edward G. Hulse.....	761½	.....	304.60
A. J. Hall.....	23	.....	12.19	John R. Rankin.....	1,426½	.....	660.30
W. H. Francis.....	16	.....	8.48	L. Hudson.....	584	.....	309.52
Jos. W. Palmer.....	2,516	.....	1,132.35	W. H. Minehart.....	254½	.....	101.80
Ben. J. Shannon.....	1,320	.....	816.00	James W. Mathers.....	665½	.....	300.60
M. F. Barrett.....	95	.....	38.00	A. Cauldwell.....	200	.....	80.00
John D. Ligon.....	51	.....	22.95	Calvin G. Dennis.....	890	.....	356.00
W. K. Martin.....	36½	.....	14.60	Edwin L. Howes.....	491	.....	196.40
Omar Wilson.....	197½	.....	79.00	H. C. McIntosh.....	373	.....	148.20
C. D. Frost.....	1,380	.....	512.00	B. C. Wright.....	3,064	.....	1,227.60
W. H. Overocker.....	1,025½	.....	410.20	John F. Connolly.....	56	.....	29.68
E. C. Grumley.....	481½	.....	255.19	William G. Clark.....	319½	.....	127.80
E. F. Baldwin.....	247½	.....	109.80	Will E. Burchfield.....	312½	.....	125.00
Frank R. Buley.....	39½	.....	15.80	L. H. Patterson.....	294½	.....	156.08
H. B. Goodrell.....	16	.....	6.40	J. S. Peavey.....	499	.....	199.60
S. M. Robinson.....	1,605	.....	642.00	Wm. H. Donoho.....	8	.....	3.20
D. L. Murray.....	1,339	.....	535.60	John E. Hays.....	179	.....	33.56
T. K. Davis.....	83½	.....	33.40	Charles F. Billopp.....	1,052½	.....	627.25
John W. Maxwell.....	2,751	.....	1,422.80	W. B. Tanner.....	33	.....	13.20
E. H. Parlin.....	2,269	.....	679.20	E. G. Weaver.....	1,484	.....	697.48
Wm. Post.....	1,979	.....	558.83	Wm. Hardy.....	1,801	.....	630.35
C. Brelsford.....	698	.....	174.50	Elizabeth Hain.....	357	.....	71.40
Adelaide Brooks.....	9	.....	2.25	Julian A. Moore.....	288	.....	72.00

No. 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK—cont'd.				TIME WORK—cont'd.			
B. L. Chritzman.....	297	.....	\$74.25	John Cole.....	2,410	.....	\$964.00
W. J. McDonald.....	162	.....	40.50	James J. Gilchrist.....	601½	.....	240.60
George H. Lee.....	152	.....	38.00	Charles F. Daly.....	2,254½	.....	901.80
B. L. Hine.....	128	.....	32.00	Varden Bishop.....	2,369½	.....	947.80
Ross Hamilton.....	119	.....	29.75	W. T. Johnston.....	2,364	.....	945.60
G. L. Milton.....	2,464	.....	616.00	T. F. Callahan.....	2,510½	.....	1,004.20
Theo. Holtz.....	56	.....	14.00	Leroy J. Gaddis.....	2,273	.....	909.20
Lizzie Many.....	120	.....	30.00	William C. Upton.....	524	.....	209.60
M. A. Pester.....	1,989	.....	457.47	Bernard White.....	2,332	.....	932.80
E. D. McKenna.....	2,368½	.....	947.40	W. P. Slater.....	2,364	.....	945.60
M. W. Longfellow.....	755½	.....	302.20	Richard Murphy.....	2,385½	.....	954.20
Wm. M. Bass.....	1,079	.....	571.87	H. R. Koon.....	2,300	.....	920.00
E. A. M. Lawson.....	885½	.....	354.20	Andrew Jaeger.....	2,456½	.....	998.60
H. K. Sherfy.....	1,228	.....	491.20	William Johnson.....	2,208½	.....	883.40
Cabel N. Huse.....	836	.....	334.40	J. Fr. Buehler.....	2,493½	.....	997.40
C. W. Schell.....	1,007½	.....	403.00	James Thompson.....	1,142½	.....	457.00
W. Seward Rowley.....	1,308	.....	523.20	W. H. Richardson.....	2,504	.....	1,001.60
Wm. F. Hinkel.....	1,885	.....	734.00	G. S. Britt.....	415½	.....	166.20
W. N. Harder.....	941½	.....	376.60	J. W. Gray.....	229	.....	91.60
L. M. Thayer.....	1,413	.....	485.20	William G. Walde.....	2,223½	.....	889.40
H. P. Daubert.....	967½	.....	387.00	John K. Bush.....	2,428	.....	971.20
A. L. Watson.....	1,162	.....	464.80	Adam Brandt.....	2,296½	.....	918.60
Arthur J. Symonds.....	843½	.....	447.05	William Gaisberg.....	2,503	.....	1,001.60
S. D. Howells.....	740	.....	296.00	T. D. Cornwell.....	2,296½	.....	918.60
John T. Leeds.....	926½	.....	370.60	Joseph Maddren.....	2,495	.....	998.00
R. H. Busteed.....	886	.....	354.40	Henry Morgan.....	2,467½	.....	987.00
Clinton O. Price.....	899	.....	359.60	Arthur H. Frisbee.....	2,202½	.....	881.00
Philip C. Brown.....	866	.....	346.40	H. W. Hobbs.....	2,240	.....	896.00
Abner Ustick.....	2,310½	.....	1,029.17	C. A. Knockey.....	2,297	.....	918.80
Chas. Knoble.....	598½	.....	238.05	Charles G. Rogier.....	2,478	.....	991.20
H. H. Stromberger.....	2,322½	.....	934.35	Richard Sweetman.....	2,500½	.....	1,000.20
De Witt C. Chadwick.....	1,384½	.....	733.78	George B. Bury.....	2,378	.....	951.20
Geo. W. Cox.....	1,583	.....	708.15	George O. Morris.....	2,311	.....	924.40
A. J. Boyer.....	1,926½	.....	783.32	J. F. Fuller.....	2,485½	.....	1,054.85
O. D. Hyler.....	1,136	.....	508.05	Lewis F. Holden.....	2,329½	.....	931.80
Isaac C. Miller.....	1,387	.....	554.80	D. C. Ringgold.....	2,203	.....	881.20
B. W. Winters.....	1,436	.....	574.40	William B. Reilly.....	2,276½	.....	910.60
George I. Ford.....	481	.....	192.40	Samuel A. Wakefield.....	2,442	.....	976.80
C. E. Rudy.....	836	.....	337.40	Clinton Groshon.....	2,310	.....	924.00
C. F. Fletcher.....	1,401½	.....	560.60	Fred F. Klebold.....	2,333½	.....	933.40
Robert I. Thomas.....	1,344½	.....	696.97	J. Lynch.....	396	.....	158.40
J. O'Connell.....	315½	.....	125.35	A. A. Henry.....	2,348	.....	939.20
Thomas Nestor.....	2,536½	.....	1,014.60	J. W. Harrison.....	2,272	.....	908.80
Howard E. Sherman.....	1,181½	.....	472.60	C. S. Murphy.....	2,372	.....	948.80
Jas. H. Matile.....	1,200	.....	480.00	John Gantley.....	2,226½	.....	890.60
W. N. Brockwell.....	169	.....	67.60	H. C. Williss.....	2,238½	.....	895.40
Charles Payne Smith.....	2,429	.....	972.00	Theo. Hardy.....	2,204	.....	880.80
S. S. English.....	2,174	.....	989.74	Augs Jacobs.....	2,503	.....	1,001.20
G. W. Hall.....	242	.....	166.10	W. H. Crenshaw.....	2,480½	.....	992.20
W. F. Walmsmith.....	40	.....	18.00	Horatio N. Leslie.....	1,426	.....	570.40
Ellis Dalrymple.....	1,952	.....	780.80	J. H. Ricketts.....	2,476½	.....	990.60
A. W. C. Nowlin.....	1,034	.....	413.60	John Morris.....	2,318	.....	927.20
John E. Hogan.....	895	.....	395.70	Gustave Hartman.....	2,455	.....	982.00
H. J. Redfield.....	1,728	.....	697.75	F. S. Metcalf.....	2,450½	.....	980.20
R. C. Hardesty.....	469½	.....	187.80	T. M. Triplett.....	2,306½	.....	922.60
J. V. Johnson.....	2,536½	.....	1,015.77	C. Thomas Elwood.....	2,325½	.....	930.20
Howard H. Dove.....	930½	.....	232.62	H. C. Dobbs.....	2,406½	.....	962.60
Harry R. Bristol.....	740	.....	138.75	H. L. Wells.....	2,419½	.....	967.80
Raymond Gerry.....	1,151	.....	463.76	T. J. Hardester.....	1,519	.....	607.60
David L. Barton.....	2,513	.....	1,005.20	Frank Morrison.....	2,465	.....	986.00
James W. White.....	365	.....	2,100.00	R. P. Riddick.....	1,697	.....	678.80
P. J. Byrne.....	313	.....	1,799.75	B. W. Morris.....	2,321	.....	928.40
C. H. Welsh.....	1,828	27	886.45	E. M. Webster.....	2,327½	.....	931.00
D. W. Landvoigt.....	2,474	.....	1,237.00	John Harris.....	2,411½	.....	964.60
H. C. Espey.....	2,383½	.....	1,196.75	John F. Galvin.....	2,381½	.....	952.60
J. A. B. Espey.....	2,433	.....	1,216.50	R. H. Rathvon.....	1,766½	.....	706.60
Edwin P. Flynn.....	2,369	.....	1,125.15	Charles J. Brady.....	2,388	.....	955.20
P. C. Gillon.....	2,300	.....	1,035.00	Harry Bier.....	2,114	.....	845.60
Robert D. Beedell.....	1,656	.....	828.00	James J. Burke.....	2,376	.....	950.40
G. Rosewag.....	1,982	.....	792.80	Andrew N. Miller.....	2,298½	.....	919.40
A. G. Hullett.....	2,389½	.....	955.80	John Griffin.....	2,347	.....	938.80
N. S. Hays.....	2,214	.....	885.60	David B. Powers.....	596	.....	238.40
J. H. Graham.....	2,381½	.....	952.60	E. C. Woodward.....	720	.....	288.00
B. L. Grinnan.....	2,498	.....	\$999.20	Robert A. Connell.....	2,393	.....	957.20

No. 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK—cont'd.				TIME WORK—cont'd.			
J. W. Gibson.....	2, 241 $\frac{1}{2}$	.....	\$896. 60	W. H. Moran.....	1, 204	.....	\$481. 60
C. Franz.....	2, 410	.....	964. 00	Edwin Pumphrey.....	1, 953 $\frac{1}{2}$	.....	781. 40
William McLane.....	2, 123 $\frac{1}{2}$	.....	849. 40	P. J. Sullivan.....	1, 804	.....	721. 60
S. T. Crawford.....	2, 453 $\frac{1}{2}$	.....	981. 40	E. Agne.....	304	.....	121. 60
W. E. Wright.....	2, 444	.....	981. 60	Andrew Melville.....	1, 858	.....	743. 20
W. H. Nalley.....	1, 511 $\frac{1}{2}$	.....	604. 60	Thomas Flint, jr.....	2, 117 $\frac{1}{2}$	.....	847. 00
James E. Bullock.....	1, 049	.....	419. 60	Milton Phillips.....	2, 440 $\frac{1}{2}$	.....	976. 20
C. Deering.....	2, 403	.....	961. 20	Frank L. Cornwell.....	2, 226 $\frac{1}{2}$	.....	890. 60
J. L. Ratcliffe.....	2, 480	.....	992. 00	George Wright.....	1, 503 $\frac{1}{2}$	.....	601. 40
John Flynn.....	2, 303	.....	921. 20	J. J. Brunor.....	596	.....	238. 40
William Hays.....	1, 794	.....	717. 60	C. M. Knott.....	2, 255 $\frac{1}{2}$	.....	902. 20
M. B. Gordon.....	2, 428 $\frac{1}{2}$	.....	971. 40	E. H. Roberts.....	319 $\frac{1}{2}$	.....	127. 80
Charles P. P. Wroe.....	2, 213	.....	885. 20	J. B. Keleher.....	2, 213 $\frac{1}{2}$	.....	885. 40
Charles W. Wells.....	2, 413 $\frac{1}{2}$	.....	965. 40	Alfred J. McGurk.....	2, 517	.....	1, 006. 80
Frank Siebert.....	2, 405	.....	1, 001. 60	W. Breckinridge.....	2, 420	.....	968. 00
Louis Boo.....	248	.....	99. 20	L. P. Keech.....	2, 481	.....	992. 40
James B. O'Neill.....	2, 284 $\frac{1}{2}$	.....	913. 80	J. J. McDonough.....	1, 525 $\frac{1}{2}$	.....	610. 20
John P. D. Caton.....	2, 476 $\frac{1}{2}$	.....	990. 60	L. W. Denham.....	504	.....	201. 60
D. P. Leech.....	2, 463	.....	985. 20	Joseph T. Gillen.....	1, 925	.....	770. 00
Edward Fuhrman.....	2, 316	.....	926. 40	John Muller.....	2, 419 $\frac{1}{2}$	.....	967. 80
Wm. M. Glover.....	2, 390	.....	956. 00	Joseph A. Burns.....	2, 221	.....	888. 40
J. Meehan.....	2, 451 $\frac{1}{2}$	.....	980. 60	James A. Stockman.....	1, 594 $\frac{1}{2}$	.....	637. 80
John J. Byrnes.....	1, 933	.....	773. 20	Charles H. Walker.....	2, 469	.....	987. 60
John Doherty.....	2, 293	.....	917. 20	R. C. McLanahan.....	158 $\frac{1}{2}$	.....	63. 40
Charles A. Williss.....	206 $\frac{1}{2}$	.....	82. 60	James A. Ryan.....	1, 487 $\frac{1}{2}$	.....	595. 00
John Short.....	63 $\frac{1}{2}$	.....	25. 40	C. D. Goodman.....	624	.....	249. 60
James Fogerty.....	2, 232 $\frac{1}{2}$	.....	893. 00	George D. Burch.....	2, 169 $\frac{1}{2}$	.....	867. 80
John Levey.....	2, 485	.....	994. 00	John L. Bentzler.....	1, 699 $\frac{1}{2}$	.....	679. 80
James T. Blakeney.....	56	.....	22. 40	J. H. Keenan, jr.....	2, 255	.....	902. 00
C. F. Frederick.....	2, 227	.....	890. 80	James D. Connor.....	1, 837 $\frac{1}{2}$	.....	730. 00
Francis Ryder.....	2, 502	.....	1, 000. 80	F. H. Chaffee.....	2, 175	.....	870. 00
T. J. Kelly.....	2, 481 $\frac{1}{2}$	.....	992. 60	Frank C. Lowey.....	2, 140	.....	856. 00
M. F. Casey.....	134	.....	53. 60	Samuel N. Childs.....	2, 099 $\frac{1}{2}$	.....	839. 80
William Poplowsky.....	2, 322 $\frac{1}{2}$	.....	929. 00	John Masterson.....	1, 581 $\frac{1}{2}$	.....	632. 60
Henry Hoiby.....	2, 386 $\frac{1}{2}$	.....	954. 60	J. H. McCormick.....	1, 505 $\frac{1}{2}$	.....	602. 20
Dominick Fowler.....	2, 365	.....	906. 00	William Chedal.....	2, 487 $\frac{1}{2}$	.....	995. 00
Joseph E. Bisbee.....	2, 438	.....	975. 20	Henry J. Kehr.....	2, 169	.....	867. 60
Charles S. West.....	2, 237 $\frac{1}{2}$	.....	895. 00	Patrick Sweeney.....	1, 319	.....	527. 60
C. P. Shettle.....	63	.....	25. 20	J. F. Glenn.....	1, 983	.....	793. 20
J. W. Whitehead.....	2, 382 $\frac{1}{2}$	.....	953. 00	Geo. G. Prior.....	2, 486	.....	994. 40
Charles E. Tretler.....	2, 106	.....	842. 40	George Whittle.....	1, 774 $\frac{1}{2}$	.....	709. 80
Augustus Kühner.....	2, 263	.....	905. 20	Frank Michael.....	1, 730	.....	606. 05
George W. Fisher.....	2, 466	.....	986. 40	H. R. Perry.....	630	.....	157. 50
John C. Hodges.....	2, 326 $\frac{1}{2}$	.....	630. 60	William Dougherty.....	2, 462	.....	781. 10
Harry A. Lammond.....	1, 475 $\frac{1}{2}$	.....	590. 20	Z. W. Alderman.....	2, 112	.....	682. 96
Thomas O. May.....	2, 476	.....	990. 40	James H. Clements.....	2, 006 $\frac{1}{2}$	.....	493. 23
James A. Rutherford.....	213 $\frac{1}{2}$	.....	85. 40	Jno. Connell.....	2, 103 $\frac{1}{2}$	.....	515. 28
Arthur C. Delevigne.....	214 $\frac{1}{2}$	.....	85. 80	Edella Dean.....	1, 844	.....	691. 50
H. D. Keyser.....	2, 418	.....	967. 20	L. J. Burse.....	2, 469	.....	771. 57
Peter Byrne.....	2, 208	.....	883. 20	C. Crooks.....	2, 424	.....	757. 50
John F. King.....	2, 336	.....	934. 40	Annie M. Humes.....	2, 224	.....	622. 72
Joseph A. Handley.....	1, 864	.....	745. 60	E. M. Yerger.....	736	.....	206. 08
James S. Dailey.....	2, 298	.....	919. 20	E. D. Davis.....	2, 019	.....	507. 78
Charles H. Kramer.....	2, 295 $\frac{1}{2}$	.....	918. 20	Mary Bishop.....	421	.....	105. 25
William Maloney.....	2, 272 $\frac{1}{2}$	.....	909. 00	M. E. Swetland.....	2, 157	.....	539. 25
James Savage.....	167 $\frac{1}{2}$	.....	67. 00	Lizzie Dewey.....	2, 161 $\frac{1}{2}$	.....	540. 37
John Adams.....	2, 397 $\frac{1}{2}$	.....	959. 00	Maggie A. Broderick.....	1, 776	.....	444. 00
Arthur E. Baker.....	2, 253 $\frac{1}{2}$	.....	914. 20	Lena Bellefeuille.....	2, 371 $\frac{1}{2}$	.....	592. 87
G. B. Harleston.....	2, 311	.....	924. 40	M. E. Calvo.....	352	.....	88. 00
J. S. Maddren.....	1, 975 $\frac{1}{2}$	.....	790. 20	Sue Saunders.....	2, 445	.....	601. 25
John M. Gantley.....	2, 517 $\frac{1}{2}$	.....	1, 007. 00	J. F. Warwick.....	2, 500	.....	625. 00
George R. P. Britt.....	2, 213	.....	885. 20	Clara A. Love.....	2, 254	.....	563. 50
J. L. Nuber.....	2, 294 $\frac{1}{2}$	.....	917. 80	Josephine E. Bennett.....	373 $\frac{1}{2}$	.....	93. 36
Frank Donn.....	1, 887	.....	754. 80	S. E. Twitchell.....	1, 174 $\frac{1}{2}$	.....	293. 62
Joseph E. Casey.....	2, 278	.....	911. 20	R. Bushee.....	2, 410 $\frac{1}{2}$	.....	602. 63
M. A. Dubois.....	2, 387 $\frac{1}{2}$	.....	955. 00	Mary M. Jenkins.....	2, 256 $\frac{1}{2}$	.....	564. 09
R. G. Lowey.....	2, 478 $\frac{1}{2}$	.....	991. 40	Dollie Waller.....	2, 142	.....	535. 50
W. S. Sheaff.....	2, 304	.....	921. 60	J. M. Sullivan.....	2, 264	.....	566. 00
Edwin R. Waters.....	2, 378 $\frac{1}{2}$	.....	951. 40	Maggie Devlin.....	2, 419	.....	604. 75
Robert H. Zimmerman.....	1, 636	.....	654. 40	Florence Smith.....	2, 218 $\frac{1}{2}$	.....	554. 62
William Marshall.....	1, 546	.....	618. 40	Ruth E. Pomeroy.....	231	.....	57. 75
Leonard Meyer.....	2, 220	.....	888. 00	Katie Chase.....	797 $\frac{1}{2}$	.....	199. 34
John A. Landvoigt.....	2, 193	.....	877. 20	Carrie Cowling.....	2, 044 $\frac{1}{2}$	.....	511. 10
James McManus.....	258 $\frac{1}{2}$	.....	103. 40	Maggie Bryerton.....	2, 201	.....	550. 25

No. 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK—cont'd.				TIME WORK—cont'd.			
Eliza A. Swan	501½		\$125.36	R. W. Lee	2,462½		\$461.70
Lizzie A. Russell	2,226½		556.61	Wm. J. Hendricks	2,073		829.20
Clara Mortimer	2,167½		541.85	E. A. Holl	283½	285	1,281.75
G. Gantt	2,448½		612.10	Jno. E. Hammond*	2,398		958.40
S. E. Sisson	2,399½		599.85	C. J. Webster	288		108.00
Emma E. Macomber	264½		66.10	John F. Ferguson	2,327		814.52
Virginia Cammack	2,131		532.75	Michael Carroll	2,457		767.80
Lizzie L. Blackiston	2,347		588.35	C. P. Dowden	2,461		615.25
Maggie A. Meehan	641½		147.52	Geo. M. Perkins	2,448½		611.98
Laura Chandler	1,402		322.43	H. Hall	2,349½		589.75
Rose Kleiber	2,265		519.95	John C. Marr	2,389		655.53
M. R. A. Boyd	1,876		431.45	Geo. W. Duvall	1,423		355.72
E. J. Holohan	2,064½		474.81	Thomas Songster	2,549		1,198.03
Hattie D. Baird	927½		213.32	A. Fitz Simons	2,257½		903.00
M. A. Connell	2,232½		513.47	C. C. Colné	2,503		1,001.20
Margaret Mitchell	264		60.72	R. B. Harford	1,954		781.60
E. McCarthy	2,233		513.58	Wells C. Harrell	2,373		949.20
M. C. Williams	1,684		387.30	James Maken	336		134.40
Anna V. Shaw	2,169		498.86	Joseph Calignon	2,374½		949.80
E. L. McLain	2,271		522.33	John Stoll	1,573		629.20
Fannie Plumer	1,284½		167.02	William Kilfoil	305½		122.20
M. H. Atwell	2,270½		522.18	G. A. Ellegood	2,191½		876.60
Annie Hopper	2,304		529.91	Wm. E. Harden	495		198.00
Louisa Adams	2,352		574.99	W. F. Clarkson	2,085½		834.20
E. Kepner	2,292½		527.24	Arthur Simmons	1,320		528.00
Emma B. Furlong	2,354		551.40	Edward J. Gilday	456		182.40
H. Collison	2,105½		484.24	F. C. Rudland	1,535½		614.20
Laura R. Cramer	2,399		585.19	James Clinton	1,373½		549.40
Mary P. Simmons	363		83.49	Wm. E. Lee	1,204		481.60
M. M. Powell	2,104½		484.03	John Shea	1,566		626.40
Lottie E. Jacobson	2,105½		484.26	Patrick H. Markey	1,218½		487.40
Mary E. Barry	1,876		431.48	C. H. Köehler	1,955		782.00
Kate V. O'Conner	530		121.90	Geo. A. O'Donnell	122		48.80
Sarah E. Hynes	2,122		488.04	C. F. Hepburn	122½		49.00
Mary Gaghan	294		67.61	T. F. Pendel	1,231½		492.60
Annie Reilly	2,332		536.36	George G. Nalley	1,449		579.60
Florence J. Harper	345		79.34	F. W. Selbach	1,424		569.60
Christianna Frank	2,039½		469.06	Harry Hyde	32		12.80
M. E. Armstrong	2,435		585.98	H. F. Ashion	32		12.80
M. T. Everly	2,169½		533.23	A. J. Buehler	25		10.00
Anna E. McColgan	2,342½		538.77	J. C. Motherhead	128		51.20
Margueret Chunn	311½		71.64	Frank Bertossa	2,404		961.60
Maggie Colbert	481		110.62	Wm. H. Loomis	2,298		919.20
Mary Shock	1,997½		594.38	Alex. Morrison	2,106		842.40
M. E. Barker	2,284		525.30	Geo. T. Langhorn	504		201.60
Agnes H. Reid	2,195		504.82	David A. Thompson	2,045		818.00
L. A. Massie	2,024		619.18	Adelia Bowen	2,416½		597.72
F. Williams	2,406		553.33	C. Skeen	2,189		503.45
F. F. Crupper	1,753		413.19	K. Gotlieb	2,361		590.24
Jennie Burns	240		55.20	Florence E. Edmonston	2,395½		550.94
E. E. Johnston	2,340		538.18	K. B. Throckmorton	1,502		345.44
A. A. Colclesser	2,424		557.52	Kate O'Connor	1,232½		283.45
Margaret Williams	2,055		472.62	A. Dickens	122		28.06
Annie E. Gross	571½		131.43	Mary S. Hardenburg	2,293		573.24
C. V. Atwell	1,561		359.01	Minnie W. Brace	1,797		413.31
S. E. Henning	2,161½		497.14	Kate Cantine	1,607½		369.72
Maggie Curtis	923		216.13	E. Finlen	1,309		301.07
Mina Fordan	2,354		572.43	Eliza J. McElfresh	1,302		299.46
Mary McGoldrack	2,261		424.88	Kate Fox	56		12.88
M. A. Dodson	936		175.50	Annie Eckart	1,213½		279.07
M. E. Walmsley	2,349½		440.48	Ella V. Evans	1,142		262.66
M. E. Flaherty	2,282½		427.95	Ora E. Hubler	1,644		378.10
S. A. Chapman	2,495		457.80	M. J. Stanley	1,258		289.33
Ellie McCarthy	2,131		399.51	Minnie Osborne	1,196		275.05
Nellie C. Connell	2,333		437.43	May Barnett	1,047		240.78
Rachel Ellinger	1,859		375.70	Geo. L. Ready	1,110		388.49
Emily T. Coke	2,206½		413.71	A. D. Coleman	1,248½		428.49
G. E. Knowles	2,33½		438.28	W. T. Kelly	2,459½		688.66
Birdie Hall	2,038½		382.18	Wm. T. Knowles	2,461		984.60
Lydia E. Bryan	2,326½		436.17	Geo. Douglas	2,186½		615.37
Joanna O'Conner	2,298		430.83	Robt. Leary	204½		51.12
Dora E. Popkins	2,276½		426.81	Thos. M. Farrell	127		31.75
Helen A. Myers	2,276		426.71	Curtis Clark	2,166		551.88
Mary A. Malone	2,209		414.17	Jacob Robinson	1,901½		475.62

No. 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK—cont'd.				TIME WORK—cont'd.			
M. C. Rucker	1,545		\$355.30	J. M. Weidman	2,062½		\$825.00
Henry T. Honck	2,336½		934.60	Peter Swift	1,815		726.00
Ida S. McDaniel	2,440		504.08	Ada H. Barker	1,812½		416.84
Jno. Pridgeon	2,201		880.40	Geo. W. Orme	2,013		805.20
Dennis Buckley	1,827½		730.80	Annie L. Scott	2,023		379.31
Robt. McCollough	2,454½		981.80	John W. Shotwell	700½		175.12
R. M. Phipps	2,021		808.40	John F. Van Horn	1,968½		787.40
Geo. W. Engel	2,323½		929.40	Jennie Naylor	1,916½		440.79
Wm. H. Kelly	539		215.60	M. V. Sutton	1,750		402.50
John A. Farrell	2,463		985.20	Effie Richardson	1,851½		425.80
Geo. D. Keyser	2,190½		876.20	J. A. Griffin	2,052½		821.00
Jas. E. Duvall	1,504½		601.80	C. W. Moore	1,852		740.80
Wm. McLanahan	153		61.20	R. W. Moore	1,152½		461.00
Geo. H. Maurer	1,923		769.20	E. H. Clagett	1,997		491.39
Michael Harris	2,462½		985.00	Mary H. Fitzpatrick	1,966		452.16
Margaret Cochran	78		19.94	Hattie Z. Horn	1,262		390.26
S. A. Kennedy	150		37.50	Jennie Goss	1,992		458.16
Katie A. Murphy	1,236½		309.11	J. H. Garden	1,510½		347.38
Virginia King	983½		245.85	Lizzie J. Farley	1,767½		406.38
Mary E. Green	1,305		244.66	F. Munson		237	1,362.75
Francis B. Connor	2,416		604.00	Mary E. Black	2,181		531.17
Chas. E. James	1,709		427.25	Lizzie Crowther	1,848½		346.57
W. W. Clark	2,525		888.70	D. J. Cunningham	1,966		501.00
John T. Kearney	2,342		936.80	Missouri Goings	1,729		597.64
D. F. Fallon	2,340		932.00	Mary E. Frazier	1,806½		415.47
R. T. Anderson	2,224		889.60	George A. Erskine	1,740		400.18
Wilson Harvey	2,368½		947.40	M. V. Worthington	1,454½		334.50
Wm. Scott	2,369		947.60	Cheney Swain	1,625½		373.85
C. F. Hodge	2,145		217.42	W. H. Le Cain	1,742		696.80
Louisa H. Cochran	2,250½		241.61	John H. Hall	1,764½		705.80
Katie R. Garrett	714		164.21	Isaiah Lancaster	1,682		420.49
Alda T. Putnam	1,883½		433.18	Jennie Dorsey	1,354		313.71
Mary E. Cornell	2,135		457.99	Ellen R. McDowell	1,771½		407.43
Effie V. Matthews	2,334½		437.58	M. D. Leonard	1,696		390.05
Silas E. McElroy	2,918½		729.60	W. J. Butler	901		360.40
Chas. Meier	2,183½		873.20	Rudolph Beck	1,681½		672.60
Geo. W. Kensil	2,319½		927.80	G. J. Nash	1,714½		685.80
Samuel Richards	1,858		743.20	H. C. Fish	1,397		558.80
J. W. Creed	857½		217.47	Alfred Pendleton	1,335		333.72
M. J. Yerby	2,305½		432.26	Herbert Macnamee	1,798½		719.40
John H. Patterson	2,281		912.40	R. L. Beatty	2,409		873.60
Ernest R. Austin	1,633		653.20	George Butler	1,714		685.60
Robert C. Gotta	2,168		867.20	G. F. White	1,667		416.75
Wm. A. Poist	1,366		546.40	H. W. McNeal	2,138		855.20
Alfred Thomas	2,311½		1,155.75	Jas. K. Bailey	1,665		660.00
C. R. Sherwood	1,841		913.99	H. Weise	1,595		638.00
A. A. Smith	2,219½		887.80	A. C. Deans	1,351½		540.60
Jno. E. Knight	754		301.60	Geo. W. Bilyeu	1,718		687.20
Jno. C. Brown	2,182		872.80	Josie W. Robinson	2,233		480.99
Jeremiah A. Connell	1,029		411.60	H. R. Perry	1,739		695.60
Bernard J. Smith	1,817		726.80	Mary J. Topham	2,229		512.67
G. W. Peacock	2,084		520.99	Henry Francis	1,607½		643.00
E. J. Hooper	144		54.00	Hattie McMahon	115½		21.65
C. Denham	1,674		680.20	C. R. Eckloff	2,180½		874.60
A. H. Lloyd	166½		41.62	Mary Lane	388		80.23
Laura Naeff	2,134		532.20	A. L. Wood	550	151½	1,091.84
W. Q. Lowd	1,867		746.80	G. O. Barnes	1,395½		558.20
Maggie L. Dodd	2,145		536.21	W. L. Griggs	1,387		698.50
Florence Adam	1,877		351.44	D. F. Anderson	1,269½		634.75
Selby B. Wilson	1,565		626.00	J. Wilson Clark	1,323½		529.40
Chas. F. Josetti	2,121		848.40	J. W. Beall	1,099		439.60
Annie E. Robb	1,990½		457.79	Dennis Toomey	1,401		560.40
Robt. A. McPherson	2,157		862.80	W. W. Taylor	1,566		626.40
Edgar J. Arnold	1,660		664.00	John J. Burns	1,531½		612.60
Geo. B. Hedges	2,137		854.80	Richard C. Lohmeyer	1,466		586.40
Philip H. Weber, jr	1,796		718.40	James O. Amos	1,228½		491.40
Chas. McEnaney	2,137		854.80	E. S. Luby	1,465		586.00
Lou M. Pemberton	2,123		530.74	John A. Flather	1,531		612.40
John W. Freeman	1,583½		395.87	Wm. L. Hettinger	259		103.60
E. J. Hooper	2,127		515.84	George Finch	1,203½		482.20
Hannah Langley	1,990		457.70	Wm. Gilliard	1,245		498.00
J. C. Cobb	1,739		695.60	Jane E. Minor	1,431		447.19
C. C. Stewart	2,266½		670.72	Florence Hoffman	1,191½		372.34
Fred. F. Bogia	2,090½		836.20	Elizabeth Mangan	1,169½		268.98

No. 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK—cont'd.				PIECE WORK—cont'd.			
M. L. Andrews	1, 075	.....	\$248. 57	W. A. Hendle .....	.....	.....	\$305. 85
Hettie Russell	1, 025	.....	235. 75	E. G. Noble .....	.....	.....	377. 35
C. M. Post	1, 117	.....	256. 97	Clarence G. Adams .....	.....	.....	528. 65
M. A. Nelson	1, 346½	.....	332. 69	Preston B. Wright .....	.....	.....	365. 05
Clara E. Carter	1, 159	.....	266. 56	Chas. E. Slentz .....	.....	.....	457. 30
Olivia J. Bond	1, 172	.....	269. 56	Geo. B. Colt .....	.....	.....	31. 50
Ellen Donaldson	1, 042	.....	239. 65	Phil. C. Brown .....	.....	.....	71. 50
Ettie S. Ellis	1, 290½	.....	296. 80	Frank M. Richardson .....	.....	.....	130. 20
Ellen B. Quayle	1, 188	.....	273. 24	Frank M. Dexter .....	.....	.....	9. 95
Virginia Rotenburg	47½	.....	10. 92	Chas. H. Ennis .....	.....	.....	408. 20
Margaret Morris	1, 340½	.....	308. 31	Geo. H. Proctor .....	.....	.....	32. 60
K. Stevens	1, 294½	.....	297. 73	John F. Moore .....	.....	.....	222. 50
Mary F. Terry	916	.....	210. 68	A. H. McKnight .....	.....	.....	325. 50
Mary Morrow	1, 228½	.....	275. 77	F. E. Warren .....	.....	.....	306. 20
Maggie McNamara	1, 205½	.....	260. 13	J. J. Clark .....	.....	.....	112. 35
Annie J. Tagart	1, 343	.....	309. 21	Chas. W. Irey .....	.....	.....	1. 80
Jennie Ferguson	152½	.....	242. 04	John C. Bree .....	.....	.....	349. 00
Kate O'Gorman	1, 148	.....	264. 03	Harry S. Gunn .....	.....	.....	315. 75
E. S. Mallery	1, 107	.....	254. 72	E. G. Morrison .....	.....	.....	434. 75
J. K. Hardesty	1, 247½	.....	436. 62	C. W. Teasdale .....	.....	.....	3. 35
James Cavanaugh	1, 272	.....	397. 50	F. B. Morris .....	.....	.....	184. 20
Moses Smith, jr.	1, 611½	.....	402. 86	John T. Leeds .....	.....	.....	4. 65
Lloyd Sharps	2, 136½	.....	534. 12	C. F. Overacker .....	.....	.....	6. 95
Robt. P. Campbell	1, 826	.....	464. 30	Chas. H. Cassavant .....	.....	.....	274. 70
Edward Taylor	1, 348	.....	337. 00	A. H. Baker .....	.....	.....	180. 60
S. M. Cornell	1, 074	.....	246. 99	W. B. Tanner .....	.....	.....	286. 80
Annie Taylor	1, 299½	.....	298. 87	Geo. C. Eby .....	.....	.....	224. 95
F. A. West	1, 928	.....	587. 95	F. E. Klopfer .....	.....	.....	275. 60
Chas. B. Amazeen	1, 542	.....	616. 80	H. Bartle .....	.....	.....	186. 15
John C. Woodell	1, 215	.....	303. 75	J. H. W. Thrush .....	.....	.....	189. 45
W. H. Collins .....	.....	6	38. 40	Charles Henry .....	.....	.....	209. 50
John Larcomb .....	.....	313	2, 003. 20	Wm. M. Polk .....	.....	.....	189. 25
Thos. J. Lasier .....	.....	177	1, 132. 80	J. C. Gawler .....	.....	.....	143. 35
Jake Covert .....	.....	313	1, 799. 75	R. W. Kerr, jr. ....	.....	.....	122. 20
M. W. Mitchell .....	.....	295	1, 698. 25	Geo. A. Webster .....	.....	.....	98. 90
Fred B. Williams .....	.....	313	1, 486. 75	Frank Lawder .....	.....	.....	176. 90
W. A. Smith .....	.....	313	1, 565. 00	B. M. Connelly .....	.....	.....	264. 55
P. M. Becker .....	.....	308	1, 305. 92	W. A. Fulton .....	.....	.....	135. 85
A. H. Taylor .....	.....	313	1, 565. 00	Edward S. Moores .....	.....	.....	279. 55
Wm. Briggs .....	.....	313	1, 327. 12	M. K. Huntsberry .....	.....	.....	171. 05
J. L. Barnett .....	.....	216	864. 00	S. W. Taylor .....	.....	.....	108. 55
John Wetzler .....	.....	72	288. 00	Alpheus Sholl .....	.....	.....	192. 30
Richard M. Dooly .....	.....	63	252. 00	W. K. Miller .....	.....	.....	119. 25
Franklin Rogers	2, 526	30	1, 130. 40	Geo. A. Calvert .....	.....	.....	134. 60
E. Cowan .....	.....	313	1, 799. 75	Garl Link .....	.....	.....	117. 65
E. A. Nichols .....	.....	108	345. 60	Frank Rosecrans .....	.....	.....	105. 40
Ben. Granger .....	.....	292	876. 00	Thomas Cahill .....	.....	.....	59. 60
W. J. Slater .....	.....	301	1, 204. 00	J. T. Harper .....	.....	.....	508. 10
J. W. Anderson .....	.....	313	1, 799. 75	C. E. Smalley .....	.....	.....	752. 95
Ora A. Brady .....	.....	305	1, 060. 00	W. H. Sipes .....	.....	.....	450. 90
A. W. Anderson	1, 456	120	845. 60	James E. Reese .....	.....	.....	375. 60
J. H. Butcher .....	.....	313	1, 095. 50	Frank R. Buley .....	.....	.....	1, 297. 85
W. E. Wise .....	.....	313	889. 00	Louis M. Kelty .....	.....	.....	35. 45
H. J. McGowan .....	.....	313	889. 00	Chas. E. Morton .....	.....	.....	429. 45
Spencer A. Searle .....	.....	280	798. 00	Wm. Laing .....	.....	.....	169. 30
H. W. Youngs .....	.....	281	562. 00	E. E. Shott .....	.....	.....	819. 25
James K. Magie .....	.....	313	1, 252. 00	S. L. Evans .....	.....	.....	547. 25
Clayton C. Mason .....	.....	282	1, 359. 00	Edwin A. Paul .....	.....	.....	643. 35
G. W. Ribble .....	.....	12	48. 00	S. A. Breen .....	.....	.....	492. 50
S. K. Cunningham .....	.....	250	1, 000. 00	Wm. C. Howlin .....	.....	.....	642. 25
Glen C. Shepard .....	.....	225	848. 80	John E. Webster .....	.....	.....	660. 75
F. P. Vale	632	234	935. 00	A. A. Martin .....	.....	.....	596. 45
A. J. Kenney	1, 566	27	891. 00	Chas. B. Fletcher .....	.....	.....	17. 55
C. A. Hofheins .....	.....	14	56. 00	C. J. Ward .....	.....	.....	292. 60
John T. Welch .....	.....	127	812. 80	D. J. Waters .....	.....	.....	510. 30
Sadie Anderson .....	.....	106	339. 20	Howard Branson .....	.....	.....	548. 70
B. P. Entrikin .....	.....	97	388. 00	Lincoln Kent .....	.....	.....	811. 35
PIECE WORK.				L. Hearn Patterson .....	.....	.....	477. 15
Francis M. McIlvaine .....	.....	.....	\$273. 22	H. A. Keefer .....	.....	.....	576. 30
James Q. Dutrow .....	.....	.....	400. 10	John R. Sturgis .....	.....	.....	621. 05
John E. Hogan .....	.....	.....	21. 80	G. M. McFarland .....	.....	.....	322. 40
				James J. Lackey .....	.....	.....	250. 45
				Wm. A. Meighan .....	.....	.....	422. 35
				John A. Behrle .....	.....	.....	563. 70

No. 29—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
PIECE WORK—cont'd.				PIECE WORK—cont'd.			
William Williams			\$450.00	Maud Dubant			\$503.31
Chas. R. Shelton			547.35	L. E. Windsor			517.31
E. F. Morrison			515.10	Mary E. Hill			561.30
Taylor Wilson			80.40	Annie Walters			477.13
W. J. Bell			618.50	Amelia Moreno			478.89
T. M. Ring			507.75	Mary A. Murray			462.71
M. M. Longfellow			68.65	Clara E. Hutton			515.60
John H. Cook			310.65	Maggie Murphy			484.53
A. O. Silvey			401.65	Millie Parker			523.84
Alfred Thompson			165.90	Nannie Daniel			359.52
Geo. L. Thompson			2.95	L. A. Shepherd			506.73
Harry F. Wilson			382.05	M. E. Dow			446.14
W. R. Ruggles			496.10	Mary Joyce			470.71
D. H. Smith			243.65	Margaret Shields			389.78
Edward G. Hulse			189.85	M. E. Eggleston			524.35
John C. Spencer			345.75	Hattie McVile			517.61
A. C. Kemether			568.40	C. Durham			41.29
Geo. H. Kerr			250.15	Marian McGivern			552.60
F. E. Garrison			271.95	M. Purcell			513.10
John F. McGinness			510.30	Kate Dowden			487.35
B. F. Sauter			390.05	Cheney Swain			99.58
J. D. Coiner			392.60	Mary Padian			187.90
James Brennan			260.25	Mary A. Smith			445.30
J. W. Whital			207.50	Elizth. A. Bell			358.88
Chas. C. Thompson			944.10	A. C. Francis			536.25
Howard Ferguson			472.10	Ada Burr			537.39
B. H. Pratt			933.40	Clara J. Robinson			533.30
W. B. Campbell			271.75	Julia A. Wolff			144.24
J. W. Fite			41.00	Georgianna Groshon			436.23
H. D. Pryor			249.85	Carrie E. Lewis			481.16
R. L. S. Halpenny			806.45	Mary Mullen			31.09
Hannah B. Sperry			465.45	Katie Flemming			449.16
Jessie F. Dumble			702.15	Mary Chamberlin			490.47
Frank A. Baxter			614.50	Kate M. Price			111.77
C. M. Fleming			530.60	Rosie Sullivan			436.37
Geo. E. Clark			491.85	Carrie B. McKnight			330.52
James M. Wood			681.80	Minnie E. Burford			236.15
Nora J. Gatewood			392.30	Josie Wright			373.28
Fred L. Davis			706.40	M. E. Lenman			285.13
Carrie L. Whitehead			417.45	Mary F. Dove			264.85
Carl E. Grabill			488.75	Donna Buchanan			459.45
Charles H. Moore			440.05	Mary Farrell			512.63
Charles W. Study			540.20	Sallie Macnichol			470.36
P. J. McAuliffe			421.95	Ella McCullum			509.84
Geo. S. McCurdy			601.70	Sue E. Stevens			483.37
J. E. Tebbetts			258.25	Gertrude B. Stewart			484.73
B. F. Constantine			592.40	Laura L. Grimes			521.85
A. C. Yates			348.75	S. K. Feltham			208.46
A. W. Bowen			641.45	Annie M. Cavanagh			465.18
Wm. S. McCurdy			538.25	Kate Decker			493.66
Wm. M. Garrett			488.45	Amelia Fisher			496.48
A. L. Randall			546.55	Margaret Fern			140.04
W. J. Bateman			532.85	Mary A. Reardon			459.72
J. T. Huggins			489.25	Carrie A. Booth			520.24
John C. Ballou			535.55	Martha Stewart			35.03
Alice M. Dixon			399.10	Mary A. Prather			480.67
R. T. Weber			440.15	Sara Collins			462.53
W. C. Smith			323.80	Mary J. Richards			433.98
Edwin M. King			390.75	Alice Reicks			497.34
James N. Swaggerty			249.45	Rebecca Orr			547.62
Nellie O'Brien			200.70	Maggie Whaley			493.08
Logan Williams			371.00	Gertrude M. Martin			41.29
Joe M. Lenhart			275.70	A. J. Bowie			466.12
L. C. Richards			272.25	Sarah H. Stevens			38.27
J. E. Tibbits			255.45	Martha Wilkins			62.59
Geo. H. Ellis			204.60	S. Bailey			541.77
J. F. O'Connor			94.90	Millie J. Rockwell			493.60
Thomas Fox			14.90	Mathilde Guyol			329.42
W. M. Robertson			75.60	M. M. Cole			491.81
R. T. Taylor			29.00	E. G. Charles			456.52
C. H. Roeder			142.85	Alice A. Brittain			461.64
C. C. Casterline			14.25	Belle Halliday			495.87
Anna Erb			59.97	M. A. Lenehan			505.46
Louisa Henry			444.55	Kate R. Smith			482.23

No. 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
PIECE WORK—cont'd.				PIECE WORK—cont'd.			
Katie A. Falkner.....			\$439.38	Jennie Fowler.....			\$309.84
Mary E. Black.....			33.76	J. Sibley.....			332.59
M. J. Yerby.....			19.27	Mary Hubbel.....			291.35
Ida Jones.....			498.28	Ella House.....			235.33
Ada H. Barker.....			59.37	N. A. Godwin.....			16.07
Annie E. Robb.....			35.62	Mary Kraft.....			18.56
Rosa B. Walsh.....			92.91	D. Lord.....			343.70
Lizzie Conner.....			496.37	A. Columbus.....			329.07
Annie J. Tagart.....			65.30	Rose E. Dooley.....			137.24
Eliza Hughes.....			480.51	M. E. Hoover.....			318.39
Mary C. Langston.....			484.70	Rachel Richardson.....			249.95
Mamie Jones.....			452.72	W. A. Rowzee.....			312.30
Effie Richardson.....			59.91	Nellie Black.....			247.30
Annie M. McDonald.....			507.26	Elizabeth McCann.....			4.27
Mina M. Green.....			397.23	M. J. Griswold.....			297.24
Ann E. Gross.....			92.29	M. G. Lillie.....			277.42
Ella F. Long.....			475.64	J. F. Rose.....			335.07
E. C. Mills.....			492.59	H. M. Eskew.....			313.27
Dora Love.....			441.27	Mary Marks.....			38.11
Emma T. Wilkerson.....			321.84	Annie Burrus.....			274.95
Mary Morrow.....			8.23	Belle Kearney.....			23.72
Kate Van Matre.....			490.77	V. A. Jones.....			556.95
Julia Barrett.....			466.23	Mary L. Lamar.....			305.52
Annie L. Scott.....			23.36	Annie V. Hay.....			142.61
Jennie Ferguson.....			19.77	E. H. Stanton.....			332.92
Missouri Goings.....			70.47	Ella Goodsir.....			334.25
R. E. Denny.....			453.71	E. Young.....			343.96
Janie Naylor.....			27.45	M. V. Leckron.....			357.87
Mary F. Terry.....			18.50	C. Fowler.....			282.89
Hannah E. Langley.....			4.73	Annie Keating.....			296.18
M. V. Sutton.....			14.86	S. J. Macleod.....			170.87
S. W. Folk.....			440.94	Marietta S. Brown.....			313.03
L. T. Morris.....			469.01	Mary Pierre.....			370.50
Lizzie Crowther.....			23.06	J. L. Dowling.....			246.87
Edith Hurdle.....			362.56	H. Harris.....			280.11
E. H. Clagett.....			8.21	Ida B. Cox.....			146.71
Frank H. Benthall.....			433.74	Mary F. Rowe.....			399.44
J. H. Garden.....			1.97	Kate Cratty.....			338.18
Lizzie J. Farley.....			3.13	Mary A. Crellin.....			355.83
Louise Covert.....			.35	Mary McInerney.....			62.95
George A. Erskine.....			21.00	Fannie Tilly.....			222.35
M. V. Worthington.....			20.30	May P. Hoffman.....			24.85
Mary E. Frazier.....			11.95	Fannie P. Snow.....			441.80
S. M. Cornell.....			43.98	Edith A. Hicks.....			414.01
Rome Elms.....			10.00	Jennie Selden.....			432.74
M. H. Core.....			44.85	B. White.....			486.65
Kate Kelly.....			337.76	Carrie Schneiderwind.....			529.26
Mary Lane.....			311.03	Bessie O'Connor.....			6.33
M. D. Leonard.....			1.97	M. Cammack.....			445.43
Ellen R. McDowell.....			3.00	Florence Adam.....			25.89
A. J. Morton.....			3.81	Kate M. Dausch.....			418.46
Carrie Hilburn.....			45.05	Mary McCormick.....			472.02
A. L. Tilghman.....			45.21	Mary Owens.....			464.78
Ida C. Lusby.....			376.93	Margaret Donohue.....			103.06
Belle Gifford.....			383.55	Annie Alley.....			153.73
Katie McCarteen.....			376.08	J. Barry.....			574.12
Annie Taylor.....			20.64	Dora Steele.....			210.97
Georgie B. McGill.....			40.17	Agnes Renehan.....			411.46
Katie Magee.....			59.04	Maggie J. Collins.....			481.53
Mildred Thornton.....			364.70	Katie O'Mealy.....			213.12
Minnie E. Martin.....			348.39	Mary A. Brannan.....			483.76
Emily Davies.....			13.90	Nannie Colton.....			441.58
Ellen F. Sydnor.....			28.29	Annie Russell.....			439.15
Sadie D. Ficklin.....			189.85	Lucy Johnston.....			6.33
Mary S. Dulin.....			354.39	Annie E. Riley.....			400.95
Mabel E. Morrill.....			62.63	Elizabeth Hain.....			287.29
Bessie A. Rowlson.....			5.56	Ida McNerhany.....			486.70
Maggie Curtis.....			323.58	Ida Dart.....			501.40
Rose Walling.....			398.67	Sarah Harrington.....			353.27
Mary E. Walsh.....			404.38	Susie Mylan.....			284.45
S. D. Soper.....			192.23	Sarah Edmonds.....			434.58
C. B. Whitt.....			24.71	Agnes McMahon.....			477.37
M. A. Burgess.....			346.07	F. C. Swearingen.....			27.13
Alice V. Daly.....			280.06	E. Thomas.....			461.91

No. 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
PIECE WORK—cont'd.				PIECE WORK—cont'd.			
E. Donnelly.....			\$475.54	Mary Brick.....			\$307.41
Mary O'Connell.....			37.85	J. A. Dougherty.....			382.16
Katie Kelly.....			435.39	M. A. O'Neill.....			475.52
Sallie Faulkner.....			391.40	Nellie Brown.....			475.24
Maud McPherson.....			169.82	A. Rogers.....			484.95
L. Hill.....			450.23	D. P. Barrington.....			236.23
Eunice W. Wright.....			413.79	Jennie A. Carter.....			431.10
Harriet A. Fugitt.....			351.32	Katie Herbert.....			88.09
M. Lasselle.....			254.69	J. Connor.....			355.17
Annie S. McCarter.....			416.85	Hattie Richardson.....			407.60
Mary Curran.....			38.54	Mary McGinnell.....			457.59
Ella Mulcare.....			471.55	A. Boyce.....			465.80
M. E. McLean.....			382.37	Cassie A. Goodman.....			332.37
Laura V. Wright.....			232.71	Mamie Gowan.....			28.99
A. Hodge.....			428.06	Effie Kaye.....			111.54
Kate Savage.....			458.96	N. Diggs.....			508.81
Katie Waller.....			364.00	Alice M. Coughloin.....			391.30
Jennie Ferguson.....			28.47	M. T. Spalding.....			623.25
O. K. Burwell.....			489.54	Etta Leonard.....			231.19
Nellie R. Adams.....			400.20	Lottie B. Tyson.....			226.61
Mary E. Wright.....			351.59	M. Walsh.....			209.35
Carrie Schwartz.....			358.49	Katie Carpenter.....			24.47
Lucy V. Ruby.....			321.11	Mary Canty.....			24.47
Maggie Leane.....			364.74	Mary A. Mulquin.....			24.47
M. A. Harper.....			82.74	Annie Ashe.....			231.10
Ida S. Crapster.....			328.04	Mary E. Buete.....			438.89
M. E. Wilson.....			400.48	Katie Polk.....			216.50
Emma F. Woodend.....			667.27	E. J. Richie.....			364.18
G. Webster.....			647.42	Annie O'Brien.....			405.73
Maggie Morgan.....			312.74	Katie Walsh.....			506.31
J. E. Segerson.....			630.24	Adelaide Brooks.....			497.80
A. Piggott.....			588.02	C. Brelsford.....			244.90
F. Pope.....			598.77	J. Wilson.....			451.51
Pearle Peticolas.....			595.74	M. M. Morrow.....			447.60
E. Wells.....			621.95	M. A. Ryan.....			454.79
M. E. Murray.....			610.46	J. Breslin.....			462.25
C. Lusby.....			624.53	J. B. Forbes.....			380.04
A. Dutrow.....			600.84	Ida Dodge.....			456.79
Julia E. Plant.....			591.24	Kate V. Smoot.....			445.23
N. Sheiry.....			37.72	Mattie G. Sollers.....			188.09
E. J. Williams.....			656.01	Katie Snee.....			171.35
Julia B. Tiffey.....			45.07	Nellie E. Fish.....			3.07
Florence Gates.....			553.57	F. Chase.....			442.66
A. McDowell.....			78.72	Ellen Handebau.....			33.01
Susie Reynolds.....			177.21	E. M. Nash.....			442.62
Emma Bumpus.....			589.95	E. W. Smith.....			597.51
C. A. Andrews.....			285.37	L. L. Andrews.....			369.53
C. Maus.....			539.62	Bettie Baker.....			235.48
Ella B. Cook.....			547.42	Mary E. Lynch.....			60.97
Ella C. Wetherall.....			515.42	Ella F. Clements.....			271.54
Annie Waters.....			640.91	Winifred Cahill.....			258.31
Mary Wellner.....			687.73	Mary Lindsay.....			252.62
M. L. Learned.....			292.56	Jennie Franklin.....			283.29
M. T. O'Connor.....			234.96	D. C. Toole.....			276.84
Annie E. Cross.....			598.95	J. A. Downing.....			305.65
Josephine Campbell.....			458.92	Jennie E. Manning.....			253.90
Ellen Farrell.....			566.07	Emma Woolsey.....			235.16
F. Baker.....			181.97	B. F. Jeffries.....			123.80
C. A. Harner.....			661.42	Jennie M. Murray.....			147.29
S. Moens.....			638.38	Ella Ahern.....			140.51
Mildred Parker.....			303.37	May Hoover.....			272.79
Amanda Klotz.....			407.68	Annie O'Hara.....			283.94
M. J. Smith.....			571.52	V. Henrick.....			208.99
A. Barreto.....			432.84	Clara Erck.....			172.38
Jennie La Porte.....			610.49	Lena M. O'Leary.....			138.14
E. Casper.....			658.68	Paula De Vantier.....			245.01
Ella C. Hardy.....			685.26	A. V. Lee.....			417.39
Lydia Shepherd.....			479.63	Miriam Meals.....			199.06
Jennie Lynch.....			662.73	Ida S. McDaniel.....			1.08
N. L. McCampbell.....			656.05	Laura V. Etter.....			282.46
Mary J. Holohan.....			637.46	Ella Mitchell.....			200.90
M. O'Leary.....			700.64	Lillie E. Bull.....			311.61
Nellie Cronin.....			264.45	Lavina Jordan.....			312.07
Mary T. Lynch.....			620.21	Caroline Glick.....			40.94
N. B. Franklin.....			493.87	D. M. Pratt.....			337.65

No. 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
PIECE WORK—cont'd.				PIECE WORK—cont'd.			
Lillie Ward			\$173. 61	M. A. Orme			\$368. 32
Belle J. McIntyre			456. 52	Agnes McGee			312. 39
Gertrude V. Withers			332. 84	Missouri Goings			10. 43
Ida Rablitt			523. 75	Susie E. Johnson			125. 16
Lucinda Luckett			345. 62	M. Fleming			81. 11
Maggie Wilson			380. 67	M. C. Hood			94. 00
Katie A. Garrett			2. 20	Ella C. Lackey			517. 93
Rosa B. Ridgely			451. 91	Lizzie Miller			433. 19
G. A. Jones			401. 14	Fannie Lavine			327. 74
Maggie K. Smith			664. 74	Charlotte Spears			172. 93
J. Hitchcox			372. 72	Mamie Russell			376. 69
M. A. Sears			219. 60	Julia Skelly			335. 77
H. Schreiner			25. 18	Ellie C. Glasgow			327. 42
Katie Moran			382. 07	Letitia Smith			328. 41
Georgie Carter			246. 46	Jannette E. Wilson			282. 58
Annie G. Laird			300. 75	Sarah Johnson			312. 30
Carrie T. Shelton			466. 78	S. E. Jackson			184. 67
Annie L. Scott			17. 14	Mary L. Rous			333. 29
Mary Queen			15. 68	J. Collins			371. 73
Laura Naef			19. 78	L. D. Christmas			309. 98
J. A. Hamilton			108. 46	J. Culhane			300. 17
Martha E. Trenis			291. 13	Mary E. Wilson			276. 22
M. E. Snype			321. 81	Rosalie Jones			161. 29
Ella Bagley			211. 45	Mary A. Brown			288. 60
Annie Higgins			459. 97	Mary B. Adamson			225. 42
Laura A. Moore			308. 32	Fannie Maxwell			274. 28
L. H. Johnson			333. 25	Mary F. Hodge			246. 73
M. Ambrose			321. 66	Maria B. Fletcher			274. 34
Mary E. Ellsworth			275. 19	Mary M. Dickinson			442. 07
Mary M. Sprandel			312. 86	Julia Matthews			258. 41
M. Clarkson			312. 92	Emma St. Clair			437. 65
M. Corbin			322. 34	Mamie Sheiry			375. 20
P. C. Pape			282. 81	Honora Lynch			501. 57
A. G. Fuller			310. 67	Hattie F. Carrigan			47. 44
Emma L. Carrico			299. 30	Julia Callahan			360. 54
A. M. Ackerman			306. 02	Minnie F. McGowan			217. 33
Bell Gheen			264. 54	J. A. Burr			265. 41
A. Hutson			283. 91	C. E. Madden			234. 10
E. Marsh			331. 23	Reba Morris			112. 01
M. V. Pemberton			225. 95	Annie Leavy			55. 41
Mary C. Ford			312. 79	Lizzie Schaefer			276. 51
Jessie R. Walton			44. 58	Maggie O'Hare			248. 64
Mary Anderson			184. 13	Emma B. Thompson			280. 31
Sarah E. Poulton			251. 98	Mamie Kidd			303. 68
K. R. Thomas			233. 47	Lillie M. Petty			296. 51
D. C. Brooke			300. 61	Mamie Gudgen			241. 35
Annie Loring			312. 44	A. Sullivan			379. 14
Mary Reapsomer			654. 52	Nellie Holland			295. 07
Mary Nolan			488. 42	Mary E. Roach			229. 38
Nellie S. Manly			440. 38	Lizzie Doyle			392. 36
L. Rogier			669. 10	Belle Carter			348. 61
Anna Buddington			351. 47	Maggie A. Duffy			316. 73
Hannah Jeffries			650. 68	M. Reed			220. 04
Maggie Brosnan			484. 93	H. M. Lauxman			203. 30
Addie Jullien			354. 46	Mary M. Kraft			256. 19
Flora J. Jacobs			372. 34	E. A. Cotti			170. 04
Annie Havenner			442. 98	Hattie McCabe			249. 69
Gertie Crofort			331. 29	Effie M. Sansbury			202. 77
Maggie Pemberton			285. 42	Rose McClelland			160. 21
Jennie Thompson			194. 59	Jennie Harrison			168. 76
Lizzie Downie			304. 16	Rebecca S. Eberle			244. 27
A. S. Adams			322. 31	Agnes W. Adam			42. 39
Sarah E. J. Porter			283. 15	Josephine Elliot			290. 02
M. Markham			328. 45	Isabel M. Long			246. 07
M. G. Coder			262. 64	Fannie Thompson			231. 98
M. A. Ross			314. 39	Marion Newcombe			94. 84
Ellen Knapp			312. 20	E. W. Marshall			161. 38
Mary Darby			438. 10	Sadie Orr			191. 56
Sabina Davitt			430. 63	Mary Smith			196. 19
Bessie Cole			334. 65	Jennie E. Hewin			184. 50
Maggie Dodd			14. 09	Louise Hopwood			209. 02
Sadie Broderick			275. 56	Bessie E. Shreve			311. 15
Anna J. Bellew			317. 64	Sarah Dodge			120. 25
Hannah Coyle			52. 61	Mattie Fitness			27. 67
Missouri G. Butler			289. 59	Sue P. Shaw			115. 74

No 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
PIECE WORK—cont'd.				PIECE WORK—cont'd.			
H. L. Stiles			\$153.94	Minnie Herbst			\$80.87
M. F. Long			391.31	Fannie Green			55.40
Mary C. Curtis			62.18	S. J. May			50.16
M. V. Hall			117.31	Bessie M. Green			47.99
J. A. Stein			143.21	M. V. Lee			46.12
M. E. Hayes			208.32	Mary Martin			81.13
Lora E. Collar			103.85	Maria L. Marble			39.77
Lillie Kendig			173.78	L. A. Hoke			64.52
Mamie Walton			101.58	Nannie Fleming			86.37
Amanda Mills			2.96	Mary Thomas			56.71
Kate Swearingen			206.05	Aggie McCann			18.76
Mary A. Griffin			205.97	Mamie Lawlor			38.35
Alice K. Bowser			194.43	Emma Frush			10.92
Bessie H. Holland			35.02	Fannie E. Carter			23.36
Mary A. Burke			217.70	Fannie Turton			12.25
B. L. Chritzman			158.24	Lulu Ransdell			29.67
Mollie E. King			237.15	M. F. Pomeroy			40.37
Kate O'Connor			201.53	Emily Baker			62.99
Kate K. Reid			194.04	Hannah Greenwood			38.93
Mary McVile			204.57	Ella A. Westgate			66.14
Lida L. Smith			159.61	B. C. DuPre			123.95
Hattie D. Baird			202.41	O. J. Ricketts			1,141.90
Lizzie Grant			206.55	Wm. C. Waters			602.60
E. A. Folck			255.45	H. Harrauld			225.20
Maud McPherson			34.90	G. D. Ellis			1,305.35
Nellie J. Paxon			192.46	George Berry			562.50
M. E. Robinson			269.46	Thos. O'Connell			280.85
Dora B. Sims			119.35	W. B. Coston			841.35
Ella Bythewood			142.91	Chas. M. Warren			1,039.20
Kate Freeman			165.72	T. J. Sheridan			950.50
Jeannette Propst			153.18	Frank Rynex			848.73
Eva Scothan			6.09	Hugh P. Griffin			724.62
F. Harleston			9.82	J. D. Adams			701.02
Maggie Colbert			206.36	Edward S. Taft			300.25
F. C. Swearingen			191.38	Wm. F. Dorsey			1,186.50
Rose L. Thompson			204.82	H. O'Donnell			1,172.80
N. P. Harris			160.61	Otho Doughty			271.85
Mattie G. Hall			139.86	John Baltzell			140.45
M. E. Calvo			176.89	J. L. Rodier			1,266.25
Addie Patterson			79.54	Samuel T. Esmay			1,078.20
M. A. Gillen			258.43	Walter T. Roche			873.95
Georgia E. Brubaker			199.33	Charles Banes			902.45
M. A. Collier			149.25	Ed. R. French			867.75
Julia Breuninger			158.59	G. W. Boynton			609.25
Libbie Marshall			97.88	E. B. Russell			532.90
Laura Shelton			124.94	J. A. Gallaher			1,048.30
Lizzie E. Williamson			184.65	Frank A. Schwing			531.10
Mary J. Gordon			11.97	J. H. Zell			796.30
Sallie L. Hawkins			20.11	D. G. Myers			684.86
Louisa T. Watrous			114.75	J. A. Turner			1,043.00
Mabel Jay			157.03	W. J. Cook			319.05
Emma D. Garwood			101.64	W. A. Wilson			260.80
Estelle Miller			169.86	Daniel V. Fenton			165.95
Carrie A. Bartlett			11.53	Chauncey R. Botsford			904.20
Alice Mooney			183.95	W. P. Anderson			555.55
M. Q. Adams			47.69	L. D. Weeks			820.90
Alice M. Day			149.32	Jeff. D. Garland			704.05
Katherine Lackland			8.94	T. M. Donn			243.80
Jennie M. Hammill			115.64	T. B. R. Wright			794.75
Edith Gale			142.38	E. C. Jones			847.15
Nellie L. Jacobs			139.47	C. P. Rhodes			622.45
Agnes Roberts			67.91	P. M. McCallum			918.35
Mary E. Cooper			113.43	E. H. Patterson			958.60
J. M. Conroy			94.03	Will C. Israel			677.90
Leona Hutchinson			80.33	Henry L. Ripley			754.55
Mellissa B. Ray			119.92	Elmer Dement			61.50
A. Benckert			140.31	C. M. Carter			60.35
Carrie E. Limbach			162.85	J. H. Sterling			71.90
Edna G. Allan			85.26	S. W. Taylor			18.80
Katie Halsey			84.24	Fred W. Goodson			4.15
Kate A. Tompkins			67.22	J. W. Carter			1,485.40
Lucy Chadwell			60.25	W. H. Duling			1,090.50
Rebecca Sparks			117.62	Fred A. Hall			1,292.10
Susie Mylan			55.03	Arthur J. Hall			1,051.20
Annie Green			69.21	J. R. McBride			137.10

No. 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
PIECE WORK—cont'd.				PIECE WORK—cont'd.			
Wm. H. Beck.....			\$47.70	Henry Knowles.....			\$24.25
Theo. Hodes.....			57.45	H. A. Graham.....			119.60
T. B. Wood.....			915.90	Geo. Saunders.....			1,039.65
L. O. Knowles.....			793.45	W. F. P. White.....			111.05
A. R. Hales.....			120.70	W. C. Lambert.....			112.40
P. P. Glass.....			125.50	Titus F. Ellis.....			77.15
Geo. S. Johnson.....			473.55	Christian C. Auracher.....			874.40
Augustus L. Roberts.....			100.75	Chas. Koffer.....			25.15
Franklin Amann.....			44.60	Jas. H. Alburtis.....			1,042.55
John F. O'Connor.....			402.25	Chas. McAuliff.....			83.25
Harvey J. Southwick.....			654.75	F. T. Maloney.....			1,015.40
T. E. Shafer.....			89.85	F. A. Brashears.....			1,025.25
W. P. Cole.....			240.50	Wm. F. Reid.....			1,117.40
J. M. Richards.....			523.20	F. W. Follett.....			54.15
F. E. Buckland.....			1,390.85	E. S. Peter.....			194.15
Tom M. Lawler.....			386.25	Laura V. Walker.....			112.29
W. E. Shields.....			198.55	Ella T. Lloyd.....			132.50
John D. Ligon.....			1,315.25	Rebecca Sparks.....			125.32
Thos. J. Shober.....			653.50	Cora Reily.....			112.48
T. F. Hering.....			977.80	Lida C. Heinline.....			118.70
De Witt C. Chadwick.....			489.80	F. A. Cogswell.....			162.80
H. L. Shomo.....			1,151.75	B. H. Ackert.....			203.65
J. H. Lowry.....			1,150.60	C. A. Howle.....			159.65
Edwin M. Blake.....			920.95	C. P. Cullen.....			56.40
W. W. McCollum.....			92.80	John R. Sullivan.....			141.55
R. P. Fithian.....			1,175.60	J. W. Cross.....			802.90
W. F. Rodrick.....			1,442.60	W. W. Harley.....			574.60
Edward P. Murray.....			830.85	Maggie Neely.....			919.60
William H. Francis.....			1,190.80	R. L. Sandridge.....			169.95
Nora C. Burns.....			1,061.10	J. B. Hicklin.....			655.05
Samuel G. Kirby.....			1,400.40	J. E. Ellegood.....			730.25
J. A. McCabe.....			661.95	Percey S. Wallace.....			586.20
Chas. W. Juno.....			1,396.45	William Kirkland.....			1,142.30
W. T. Mills.....			1,091.85	Daniel Murray.....			991.20
Daniel Grady.....			996.55	E. L. Kaiser.....			521.90
J. Fisher Hauer.....			1,331.90	I. B. Chisolm.....			167.20
C. K. Schwarzer.....			334.50	J. T. Brennan.....			816.05
Jas. Austin.....			7.75	J. M. Thompson.....			445.75
J. B. Dickman.....			470.85	Chas. J. Peake.....			1,027.40
E. J. Handley.....			1,217.25	C. J. Devaughn.....			799.00
Byron W. Bonney.....			269.30	Jas. E. Brooke.....			114.10
F. H. Barnhart.....			1,069.40	L. Q. Fletcher.....			1,043.90
E. C. Grumley.....			772.90	Jas. M. Brennan.....			80.60
J. W. Carroll.....			311.30	J. Latham Shober.....			452.85
H. D. Young.....			1,250.10	Walton Harrison.....			142.90
Geo. H. Welsh.....			1,421.65	L. Hudson.....			641.10
R. C. Wilson.....			431.00	Alfred J. Arnold.....			456.85
L. C. Dillon.....			1,096.15	C. C. Conlee.....			816.85
Henry Houghtaling.....			1,093.10	George Winter.....			490.20
O. S. Webster.....			1,053.55	Wm. McF. Thawley.....			633.85
Theo. A. Fowler.....			1,138.95	A. S. Downs.....			669.25
Clarence Lewis.....			1,242.80	Sam'l C. Hanlon.....			521.45
Geo. C. Tyler.....			674.00	Geo. Zimmerman.....			759.05
G. W. Hall.....			1,091.85	Wilber A. McClellan.....			306.50
W. F. Walsmith.....			1,049.20	Merrils H. Clark.....			917.40
Louis C. Johnson.....			1,087.75	T. A. Dougherty.....			476.25
Aug. M. Laing.....			1,305.60	C. Solon Stevenson.....			1,010.05
Charles N. Warren.....			929.60	McClellan Jones.....			383.70
Arthur J. Symonds.....			797.85	C. E. Richards.....			152.25
J. W. Miller.....			1,078.60	F. H. Hopkins.....			537.05
Harold Benedict.....			1,120.65	F. C. Williams.....			734.80
E. De Caindry.....			1,034.90	John C. Coheano.....			837.95
A. McNelly.....			96.80	L. J. Bennett.....			129.80
F. A. Rhoderick.....			321.35	Mortimer J. Shea.....			953.05
W. A. Marschalk.....			1,269.65	Josephine Simpson.....			804.25
Jos. McCann.....			1,518.00	W. H. Moss.....			12.50
L. H. Jullien.....			172.05	P. B. Anderson.....			35.50
Harry Indermaurer.....			1,106.65	John E. Doherty.....			512.25
Jas. E. Frost.....			23.10	A. G. Leonard.....			1,115.50
Chas. A. Capell.....			436.45	Jas. H. Brooks.....			1,038.25
L. H. Patterson.....			574.25	Wm. F. Burdick.....			218.50
H. L. Work.....			887.15	Geo. Simpson.....			44.00
B. F. Hackman.....			1,207.10	Fred L. Cox.....			201.30
J. A. Handibee.....			606.15	A. A. Roland.....			896.65
Geo. S. Kauffman.....			24.45	Sarah C. Cromelien.....			866.05

No. 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
PIECE WORK—cont'd.				PIECE WORK—cont'd.			
Kate A. Cheatham.....			\$200. 80	H. H. Hoyme.....			\$1, 179. 40
Annie L. Grove.....			908. 00	W. A. Griswold.....			706. 05
Olive L. Gilmore.....			910. 00	H. F. Tompkins.....			78. 65
Mamie T. Hayden.....			558. 75	Maggie McNamara.....			78. 11
Hattie E. Robinson.....			1, 163. 30	Virginia King.....			57. 39
Mary Sabine Ashby.....			1, 177. 05	M. J. Finney.....			15. 74
T. C. Spurgeon.....			987. 40	J. C. Wilson.....			46. 95
John K. Seagraves.....			90. 25	Chas. E. Groome.....			40. 45
Geo. Johnson, jr.....			101. 05	Frank H. McClellan.....			5. 50
John H. Shaw.....			416. 45	John F. Hurley.....			33. 70
Mary Blore.....			1, 153. 90	Thos. Nestor.....			56. 70
Dollie A. Platt.....			945. 90	R. H. Campbell.....			900. 65
Dan L. Sansom.....			155. 85	John P. Hinkle.....			862. 95
Mollie E. Ragan.....			869. 10	Wm. E. T. Greenfield.....			7. 65
N. H. Shipman.....			390. 75	Andrew Turnbull.....			1, 080. 70
Callie Jacoby.....			861. 50	W. G. Glenn.....			163. 80
E. Finley Kitson.....			585. 40	W. P. Chew.....			35. 50
H. Zucker.....			965. 40	A. G. Allison.....			6. 05
Wm. E. Cobb.....			802. 50	A. R. Platt.....			246. 80
A. St. A. Smith.....			44. 60	H. Y. Brooke.....			670. 60
J. B. Trousdale.....			403. 35	Wm. Raymond.....			27. 95
Wm. J. C. O'Brien.....			839. 15	E. Toner.....			642. 65
Ralph Pomeroy.....			801. 75	D. R. Ferris.....			501. 75
Henry Noyes.....			382. 50	Frank K. Raymond.....			852. 65
J. S. Connor.....			940. 60	Frank McDermot.....			758. 85
D. F. Melling.....			725. 35	O. D. Hyler.....			235. 70
R. F. Simms.....			947. 45	E. N. Lancaster.....			649. 80
Thos. W. Burt.....			471. 05	J. F. Cummings.....			800. 25
O. B. Chapman.....			692. 30	D. J. McCarty.....			822. 85
T. S. Rice.....			781. 60	W. H. Covert.....			870. 60
J. S. Barr.....			1, 021. 85	Harry Armstrong.....			797. 10
Louis P. Goodrich.....			756. 55	C. E. Rudy.....			475. 25
I. M. Mattingly.....			771. 80	M. J. Sherk.....			619. 40
A. J. Dick.....			26. 40	A. E. Townsend.....			380. 75
S. J. Gompers.....			917. 85	Howard E. Sherman.....			461. 30
E. E. Longley.....			366. 90	Samuel M. Holt.....			454. 25
Bernardine Smith.....			147. 55	F. B. Brown.....			640. 15
E. L. Greenman.....			948. 30	G. Wm. Sollers.....			81. 55
N. S. Cologne.....			10. 95	E. C. Boteler.....			720. 50
Jas. B. Williamson.....			860. 95	Thos. J. Simmons.....			536. 95
R. M. Pendleton.....			208. 35	Henry W. Weber.....			714. 75
F. W. Muhlhofer.....			765. 55	J. King Marks.....			518. 80
R. T. Chisholm.....			182. 55	D. W. Flemming.....			618. 50
B. H. Baxter.....			1, 257. 80	Wm. J. Morton.....			631. 70
De Witt Hunt.....			140. 60	W. T. Menard.....			660. 75
J. B. Shirey.....			182. 35	J. H. Conkling, jr.....			542. 65
F. W. Street.....			1, 209. 70	D. H. Mosely.....			442. 25
L. C. Richards.....			381. 55	Geo. W. Robinson.....			438. 20
Wm. M. Hoffman.....			326. 95	Thomas Phillips.....			460. 80
Wilbur G. Brower.....			937. 40	Edgar M. Baldwin.....			521. 80
K. S. Goodloe.....			720. 65	J. L. Gilbert.....			488. 80
T. P. Moore.....			127. 80	W. H. Bawden.....			328. 15
V. B. Pinkston.....			625. 15	Jos. F. Phillips.....			452. 75
O. N. Bradburn.....			644. 65	A. S. Coulson.....			307. 00
John Maley.....			920. 75	Frank Snyder.....			6. 95
Clarence Gardner.....			278. 50	J. A. Oldfield.....			204. 60
H. T. McGowen.....			579. 40	Geo. W. Elberti.....			152. 15
A. J. E. Hubbard.....			302. 00	Geo. H. Faust.....			363. 35
T. A. Rhodes.....			1, 201. 10	A. N. Brown.....			235. 30
S. E. Davies.....			1, 210. 75	J. M. Smith.....			162. 65
I. Frank Stewart.....			642. 40	Thos. P. Neal.....			170. 80
L. H. Patterson.....			282. 90	G. W. Boynton.....			206. 95
Homer M. Green.....			317. 20	James H. Spencer.....			275. 95
Herman Martin.....			1, 102. 55	Emma Maher.....			310. 28
Will M. Edmunds.....			1, 336. 85	Zulie Thompson.....			11. 51
P. A. Grimsley.....			1, 178. 90	Rosa B. Kerney.....			306. 56
Geo. C. Havener.....			230. 40	Emma E. Miller.....			43. 57
Jas. L. Welty.....			1, 169. 50	Florence M. Harris.....			5. 48
John R. Knapp.....			645. 80	J. A. Seward.....			301. 53
Geo. P. Dowell.....			253. 00	Ida P. Belcher.....			217. 19
L. P. Sutor.....			1, 062. 30	Maggie McDonald.....			5. 19
John Tuite.....			46. 70	Mary E. Galor.....			300. 27
J. E. Fullenwider.....			1, 116. 55	Maggie Swan.....			29. 95
J. H. Shoeff.....			1, 039. 35	Annie A. Hurley.....			272. 55
Chas. I. O'Neill.....			583. 20	E. J. Essex.....			94. 94

No. 29.—Statement showing the number of persons employed in the public printing and binding (including Congressional Record) during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
PIECE WORK—cont'd.				PIECE WORK—cont'd.			
Emily O. Feltham			\$210.23	J. O'Connell			\$972.30
Josephine Plumer			207.76	H. D. Beach			199.35
Minnie Bardwell			225.79	H. H. Humble			534.70
Alice M. Rocheford			134.43	E. M. Kerrott			377.70
Bessie H. Holland			73.41	John A. Handiboe			443.65
Lizzie Chandler			184.72	George J. Ford			361.55
Alice Burns			36.29	J. H. Bassett			892.10
M. Kinsella			52.09	David Shaw			1,160.90
N. D. Elliot			66.76	W. E. Grimes			1,124.15
S. K. Young			1,145.45	Chas. Garrells			631.30
J. L. Sinn			761.45	Jas. H. Matile			148.35
A. M. LeMerle			146.75	N. H. Overacker			511.55
E. D. Smoot			282.85	J. R. Hinchliffe			133.10
G. T. Gosorn			217.00	H. T. Schildrath			359.89
S. M. Robinson			273.90	W. R. Chipley			264.70
R. J. Wilson			86.95	R. C. Hardesty			464.25
F. W. Feldman			365.20	E. C. Jones			8.15
George Fentrick			14.85	F. E. Boyd			7.00
W. J. McCalley			480.75	Jas. F. Kirkpatrick			6.80
L. B. Terhune			483.50	G. W. Shaffer			5.05
Chas. E. Winter			640.30	W. R. Carver			7.95
D. N. Prosser			6.80	Geo. Mc. Cutcheon			8.15
C. G. Probert			8.10	G. N. Coe			1.35
A. J. Watson			7.75	B. F. Williams			6.00
C. W. Irey			5.65	M. J. Scannell			5.40
W. C. Stocks			7.10	Dean Miller			6.40
Bertt H. Brockway			6.15	John O'Neill			7.30
W. W. Williams			33.80	J. W. Usilton			10.35
R. S. Smith			1,066.55	F. A. Allison			5.35
Wm. Raymond			1,049.75	J. W. Verity			6.75
Jos. P. Turk			40.60	C. W. Bender			3.55
E. F. Baldwin			829.50	R. W. Mallox			5.30
E. H. Ryan			804.75	J. C. Speer			7.10
Ed. Payne			453.55	A. Craig			7.05
Gustave Warnke			249.50	W. Gilrup			6.70
Wm. R. Barbour			32.90	D. O'Connell			6.05
Orlando S. Montz			1,088.35	L. Johnson			5.95
F. M. Aldridge			216.25	E. N. Bunker			4.85
S. H. Daugherty			57.85	W. H. Hamilton			6.40
H. E. Springer			1,156.50	C. S. Bastian			3.70
T. F. Tuohy			1,169.80	E. J. Hall			1.25
E. H. Burch			891.25	W. A. Ball			6.25
A. G. Naylor			275.50	P. P. Orth			9.75
H. B. Goodrell			896.75	Virginia Walton			16.01
D. L. Murray			379.35	Minnie R. Collins			22.07
James E. Reese			445.90	Cornelia McCord			9.52
W. K. Martin			983.15	Adelia Cook			13.24
H. J. Redfield			333.40	S. Martin			15.47
J. C. Euler			1,504.25	Mary H. Ryan			2.94
G. A. Rinehart			936.75	Annie Cullen			23.07
J. H. Sternberg			71.30	M. J. Speaks			12.11
Wm. D. Sullivan			230.10	M. A. Pester			4.03
John O. Honey			802.70	Delia Harper			2.23
William Wilson			1,121.35	W. F. Councell			3.80
J. M. Johnston			920.15	N. H. Lytle			42.90
C. W. Graff			1,329.40	B. F. Henry			6.20
Charles Knoble			950.35	J. L. Thompson			2.45
C. D. Frost			399.10	Guy W. McCord			5.10
M. F. Barrett			870.05	Geo. W. Wetmore			5.45
Edward W. Searfoss			331.20	Geo. J. McQuaid			4.55
W. J. Harris			230.25	Geo. M. Godfrey			19.25
Ben. Shannon			325.70	C. W. Millett			1.30
S. K. Davis			898.65	Fred W. Gardner			3.65
Ed. Fallon			937.45	J. W. Graham			6.10
W. J. Gailbraith			1,209.50	J. C. Wilson			2.95
A. A. Allison			185.10	Rob't M. Smith			4.90
Ed. Toner			434.35	F. H. Melick			6.55
Martin N. Evans			215.65	E. G. Farrell			5.50
Omar Wilson			943.30	Timothy O'Sullivan			2.40
William Henkel			152.75	Arthur Hamilton			5.95
R. B. Smythe			321.65	Hoyt A. Holton			188.15
N. M. Light			103.65	S. F. McBride			4.90
David L. Barton			22.00	Frank H. Hambright			6.00
W. L. Pierce			266.80	John F. Heath			2.60
W. N. Brockwell			497.80	W. F. P. White			4.10

No. 30.—Statement showing the number of persons employed in printing Annual Report (1888) of Commissioner of Agriculture during the fiscal year ended June 30, 1890, with the length of time each has been employed and the amount each has received.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK.				TIME WORK—cont'd.			
W. L. Griggs.....	790	.....	\$395.00	Olivia J. Bond.....	832	.....	\$191.36
D. F. Anderson.....	795½	.....	397.75	Ellen Donaldson.....	741½	.....	170.54
R. T. Anderson.....	199	.....	79.60	Ettie S. Ellis.....	599	.....	137.76
Wells C. Harrell.....	96	.....	38.40	Mary H. Fitz Patrick..	492	.....	113.16
James Maken.....	96	.....	38.40	Margaret McNally.....	326½	.....	75.09
Ed. P. Pumphrey.....	440½	.....	176.20	K. B. Throckmorton....	342	.....	78.66
J. W. Beall.....	840	.....	336.00	Kate O'Connor.....	694½	.....	159.73
Dennis Toomey.....	837	.....	334.80	A. Dickens.....	80	.....	18.40
H. C. Mulloy.....	570½	.....	228.20	Kate O'Gorman.....	788	.....	181.23
Arthur Simmons, jr....	520	.....	208.00	Jennie Goss.....	512	.....	117.76
Edward J. Gilday.....	701	.....	280.40	Jennie A. Jenkins.....	215	.....	49.45
F. C. Rudland.....	381	.....	152.40	E. S. Mallery.....	837	.....	192.51
James Clinton.....	764	.....	305.60	Jennie Dorsey.....	756	.....	173.85
Wm. E. Lee.....	729½	.....	291.80	T. F. Lee.....	518	.....	155.40
John Shea.....	173	.....	69.20	J. K. Hardesty.....	839	.....	293.65
Patrick H. Markey.....	675½	.....	270.20	A. D. Coleman.....	681	.....	238.35
C. H. Koehler.....	352	.....	140.80	James Cavanaugh.....	840	.....	262.50
E. S. Luby.....	796	.....	318.40	Geo. R. Price.....	492	.....	118.00
Jno. C. Browne.....	224	.....	89.60	Robert Leary.....	272	.....	68.00
T. D. Macfeat.....	496	.....	198.40	Thos. M. Farrell.....	88	.....	22.00
Peter Swift.....	248	.....	99.20	Jacob Robinson.....	544	.....	136.00
John Pridgeon.....	32	.....	12.80	Moses Smith, jr.....	702	.....	175.50
Dennis Buckley.....	32	.....	12.80	A. J. Davison.....	16	.....	4.00
R. M. Phipps.....	102	.....	40.80	John C. Green.....	396	.....	99.00
Robert McCullough.....	32	.....	12.80	Chas. B. Amazeen.....	583½	.....	233.40
Geo. W. Engel.....	32	.....	12.80	Wesley A. Merchant....	183	.....	45.75
Wm. Kelly.....	32	.....	12.80	Edward Taylor.....	736	.....	184.00
John A. Farrell.....	32	.....	12.80	William H. Chew.....	710	.....	177.49
Geo. D. Keyser.....	32	.....	12.80	Ira Phillips.....	504	.....	126.00
John A. Flather.....	816½	.....	326.60	Thomas J. Davis.....	216	.....	54.00
Geo. A. O'Donnell.....	87½	.....	35.00	Margaret Cochran.....	259	.....	59.56
C. F. Hepburn.....	356½	.....	142.60	S. A. Kennedy.....	560½	.....	128.89
T. F. Pendel.....	651	.....	260.40	Katie A. Murphy.....	738½	.....	169.85
Bernard J. Smith.....	128	.....	51.20	Virginia King.....	172½	.....	39.67
Jas. E. Duvall.....	96	.....	38.40	Ellen B. Quayle.....	748	.....	172.00
John C. Woodell.....	716½	.....	286.60	John C. Green.....	104	.....	36.40
G. H. Breitenbach.....	216	.....	86.40	F. Munson.....	74½	.....	427.66
James O. Amoss.....	606½	.....	242.60	M. L. Andrews.....	200	.....	62.50
J. Wilson Clark.....	808	.....	323.20	Geo. L. Ready.....	762	.....	266.70
Richard C. Lohmeyer..	794½	.....	317.80	Leonard Meyer.....	96	.....	38.40
W. W. Taylor.....	827	.....	330.80	Joseph Colignon.....	96	.....	38.40
Jno. E. Knight.....	231	.....	92.40	Jeremiah A. Connell....	96	.....	38.40
F. W. Selback.....	680	.....	272.00	Andrew Melville.....	48	.....	19.20
Harry Hyde.....	368	.....	147.20	J. C. Motherhed.....	376	.....	150.40
H. F. Ashion.....	226½	.....	90.60	George Wright.....	702½	.....	281.00
A. J. Buehler.....	412	.....	164.80	John J. Burns.....	696	.....	278.40
John T. McCausland....	212	.....	84.80	Jos. T. Gillen.....	96	.....	38.40
George Finch.....	722	.....	288.80	J. H. Keenan, jr.....	96	.....	38.40
Joseph P. Day.....	665	.....	266.00	John L. Bentzler.....	698	.....	279.20
William Gilliland.....	721	.....	288.40	Jas. D. Connor.....	95½	.....	38.20
Wm. McLanahan.....	32	.....	12.80	Geo. G. Nalley.....	671½	.....	268.60
George H. Maurer.....	48	.....	19.20	Patrick Sweeney.....	712	.....	284.80
Michael Harris.....	32	.....	12.80	C. V. Atwell.....	564½	.....	129.83
G. O. Barnes.....	761½	.....	304.60	Virginia Rotenbury....	670	.....	175.83
Jane E. Minor.....	837½	.....	261.71	Hattie Z. Horn.....	368	.....	84.64
Florence Hoffman.....	635½	.....	198.58	Geo. W. Duvall.....	688	.....	172.00
Kate Cantino.....	712	.....	163.76	Geo. Luskey.....	659	.....	164.75
E. Finlen.....	711½	.....	163.64	Wm. A. Poist.....	601	.....	240.40
Eliza J. McElfresh.....	501	.....	115.23	J. W. Creed.....	636	.....	161.40
Kate Fox.....	227½	.....	52.32	F. A. West.....	210	.....	63.00
Annie Eckart.....	505	.....	116.40	C. R. Sherwood.....	479½	.....	239.75
Ella V. Evans.....	499	.....	114.77	Margaret Morris.....	503	.....	115.69
Ora E. Hubler.....	505½	.....	116.24	Ernest R. Austin.....	442	.....	176.80
M. J. Stanley.....	599	.....	137.76	Kate Stevens.....	419½	.....	96.48
Minnie Osborne.....	539½	.....	124.08	Ada H. Barker.....	8	.....	1.84
May Barnett.....	475½	.....	109.36	Minnie W. Brace.....	418	.....	96.14
Mary Eckloff.....	350½	.....	80.61	May F. Terry.....	392	.....	90.16
Elizabeth Mangan.....	836	.....	192.26	Mary Morrow.....	386½	.....	88.89
M. L. Andrews.....	458½	.....	105.45	Maggie McNamara.....	389½	.....	89.58
Katie A. Mandley.....	240	.....	55.20	Annie J. Tagart.....	361	.....	83.03
Hettie Russell.....	616	.....	141.66	Jennie Ferguson.....	288½	.....	66.35
C. M. Post.....	246	.....	56.56	J. H. Garden.....	32	.....	7.36
M. A. Nelson.....	840	.....	193.20	Lizzie J. Farley.....	32	.....	7.36
Clara E. Carter.....	594½	.....	136.73	John Stoll.....	324	.....	129.60

No. 30.—Statement showing the number of persons employed in printing Annual Report (1888) of Commissioner of Agriculture, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK—cont'd.				TIME WORK—cont'd.			
P. J. Sullivan.....	322½		\$129.00	A. A. West.....	427		\$106.75
Philip H. Weber, jr....	320½		128.20	Lizzie W. Gray.....	447		111.75
R. W. Moore.....	322		128.80	A. Hughes.....	650		162.50
Lloyd Sharps.....	336		84.00	Agnes Landrigan.....	136		34.00
Robert P. Campbell.....	329		91.55	Ada Dolbeare.....	144		36.00
A. L. Wood.....		29	166.75	J. R. Ellis.....	610		152.50
Wm. L. Hettinger.....	223½		89.40	Alice Martin.....	642		160.50
J. F. Glenn.....	231		92.40	Lena Dement.....	638		159.50
J. J. McDonough.....	92½		37.00	Andrew Taff.....	476		190.40
H. C. Fish.....	96		38.40	J. J. Verser.....	443		155.05
S. M. Cornell.....	24		5.52	James Doyle.....	475		166.25
R. C. Lappin.....	312		156.00	S. K. Coster.....	475		142.50
David Hickey.....	330		99.00	W. H. Berry.....	468		140.40
W. C. Martin.....	304		91.20	E. P. Getchell.....	476		142.80
J. H. Snapp.....	472		118.00	William J. Rountree.....	375		93.75
James A. Lee.....	368		92.00	Thomas Flanagan.....	192		48.00
Charles E. Clark.....	472		118.00	Noble Spates.....	398		99.50
J. W. McMahon.....	480		120.00	S. T. Satterfield.....	384		96.00
William Fletcher.....	647		202.19	S. Hess.....	384		96.00
Benj. Davison.....	558		174.37	V. M. Evans.....	216		54.00
T. E. Shields.....	480		168.00	L. H. Davis.....	256		64.00
W. C. McLeod.....	540		151.20	Belle Gates.....	426		106.50
C. D. Parsons.....	659		349.27	Dora C. Reicks.....	409		102.25
Columbus Hall.....	59		23.60	H. Schreiner.....	416		104.00
H. A. Gilbert.....	549½		219.80	Mary R. Biggins.....	425		106.25
Edward C. Maher.....	348		139.20	M. V. Purdy.....	328		82.00
Edwin Johnson.....	339½		135.80	M. E. Speiser.....	325		81.25
R. C. McAuley.....	45		18.00	Ellen Handebau.....	328		82.00
S. T. Brown.....	261½		112.27	W. D. Foos.....	369		110.70
Frank Fraser.....	184		75.52	R. E. Scott.....	287		71.25
Mary E. O'Brien.....	88		18.48				
Ida P. Belcher.....	208		43.68	PIECE WORK.			
Elizabeth Dement.....	240		50.40	M. E. Lenman.....			46.90
Cecelia A. Moore.....	184		38.64	Mary F. Dove.....			34.30
Julia Murrell.....	160		33.60	Donna Buchanan.....			33.25
Douglas Reid.....	232		58.00	Mary Farrell.....			47.95
Fred Hudson.....	594½		148.62	Sallie Macnichol.....			47.05
Thos. Conway.....	602		150.49	Ella McCullum.....			47.25
Wesley Redmond.....	48		12.00	Sue E. Stevens.....			38.95
Frank Dial.....	390		97.50	Gertrude B. Stewart.....			21.00
Albert Thomas.....	49		12.25	Laura L. Grimes.....			48.65
James L. Feeney.....	558		223.20	S. K. Feltham.....			33.60
C. S. Mills.....	517		155.10	Annie M. Cavanagh.....			45.85
W. E. Gowan.....	420		126.00	Kate Decker.....			40.60
Wm. T. Hall.....	146½		36.62	Amelia Fisher.....			34.30
Geo. F. McInturff.....	291½		72.87	Margaret Fern.....			38.50
J. J. Britt.....	24		6.00	Mary A. Reardon.....			31.50
Jas. A. McGrane.....	96		38.40	Carrie A. Booth.....			48.30
Wm. Moody.....	338		84.50	Martha Stewart.....			19.95
Arthur E. Payne.....	24½		6.12	Mary A. Prather.....			43.75
Charles L. Clarke.....	185		46.25	Sara Collins.....			35.00
Max Craft.....	289		72.25	Mary J. Richards.....			44.80
Chas. P. Goodacre.....	296		74.00	Alice Reicks.....			44.95
John N. Wright, jr.....	72		28.80	Rebecca Orr.....			21.70
Wm. Donath.....	136		34.40	Maggie Whaley.....			49.30
Harry B. Smith.....	192		67.20	Gertrude M. Martin.....			22.05
William P. Reese.....	405		162.00	A. J. Bowie.....			43.40
S. W. Stevens.....	744		260.40	Sarah H. Stevens.....			19.50
H. A. Givin.....	745		223.50	Martha Wilkins.....			20.65
W. H. Forrester.....	255½		76.65	S. Bailey.....			23.80
J. E. Vaughn.....	264		79.20	Millie J. Rockwell.....			38.15
J. M. Pence.....	264		79.20	Mathilde Guyol.....			28.00
M. R. King.....	264		79.20	M. M. Cole.....			46.90
James A. McPherson.....	8		2.40	E. G. Charles.....			45.85
W. B. Simmerman.....	48		14.40	Alice A. Brittain.....			45.15
Augustus Schwartz.....	677½		183.25	Belle Halliday.....			47.95
H. D. Tracy.....	264		66.00	M. A. Lenihan.....			48.30
John A. Flannery.....	48		12.00	Kate R. Smith.....			46.20
Patrick Doyle.....	558		139.50	Kate A. Falconer.....			22.05
William A. Boyd.....	607		151.75	Mary E. Black.....			19.25
Charles E. McCourt.....	48		12.00	M. J. Yerby.....			3.85
J. E. Smith.....	750		187.50	Anna Erb.....			28.35
Jos. H. Cook.....	458		114.50	Louisa Henry.....			40.25
A. T. Abell.....	80		32.00	Maud Dubant.....			44.10
E. J. Harper.....	535		133.75				

No. 30.—Statement showing the number of persons employed in printing Annual Report (1888) of Commissioner of Agriculture, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
PIECE WORK—cont'd.				PIECE WORK—cont'd.			
L. E. Windsor.....			\$46. 20	Ronie Elms.....			\$1. 75
Mary E. Hill.....			23. 80	S. M. Cornell.....			4. 20
Annie Walters.....			44. 80	Kate Kelly.....			3. 85
Amelia Moreno.....			20. 30	M. D. Leonard.....			35
Mary A. Murray.....			20. 30	Ellen R. McDowell.....			35
Clara E. Hutton.....			47. 95	M. H. Core.....			1. 40
Maggie Murphy.....			32. 55	Mary Lane.....			2. 45
Millie Parker.....			48. 30	A. J. Morton.....			35
Nannie Daniel.....			32. 20	A. L. Tilghman.....			1. 40
L. A. Shepherd.....			45. 50	Ida C. Lusby.....			1. 40
M. E. Dow.....			20. 30	Belle Gifford.....			1. 75
Mary Joyce.....			29. 75	Katie McCarteen.....			1. 05
Margaret Shields.....			38. 15	Georgie B. McGill.....			70
M. E. Eggleston.....			47. 95	Katie McGee.....			35
Hattie McVile.....			48. 30	Mildred Thornton.....			35
C. Durham.....			20. 60	J. Collins.....			16. 50
Marian McGivern.....			46. 55	M. C. Hood.....			16. 50
M. Purcell.....			43. 40	Mary A. Brown.....			13. 38
Kate Dowden.....			36. 40	Mary B. Adamson.....			16. 50
Cheney Swain.....			35. 70	Minnie F. McGowan.....			29. 15
Mary Padian.....			45. 15	Mary E. Wilson.....			31. 60
Mary A. Smith.....			35. 35	Lizzie Doyle.....			47. 60
Elizabeth A. Bell.....			3. 50	Belle Carter.....			22. 77
A. C. Francis.....			48. 30	Ella Mitchell.....			97. 88
Ada Burr.....			48. 30	M. E. Hoover.....			92. 95
Clara J. Robinson.....			48. 30	W. A. Rowzee.....			90. 22
Julia A. Wolff.....			47. 60	Lillie E. Bull.....			94. 33
Georgianna Groshon.....			31. 85	Elizabeth McCann.....			18. 07
Carrie E. Lewis.....			29. 05	Sabina Jordan.....			89. 75
Marry Mullen.....			17. 15	M. J. Griswold.....			98. 84
Kate Fleming.....			33. 60	J. F. Rose.....			98. 63
Mary Chamberlin.....			31. 50	Mary Marks.....			50. 19
Kate M. Price.....			43. 40	Annie Burrus.....			96. 41
Rosie Sullivan.....			34. 30	Gertrude V. Withers.....			94. 57
Carrie B. McKnight.....			30. 45	V. A. Jones.....			46. 93
Minnie E. Burford.....			30. 10	Mary L. Lamar.....			98. 43
Josie Wright.....			47. 25	E. H. Stanton.....			98. 90
Ida Jones.....			45. 85	Ella Goodsir.....			90. 61
Ada H. Barker.....			28. 90	Georgie I. Carter.....			97. 39
Annie E. Robb.....			15. 05	E. Young.....			102. 00
Rosa B. Walsh.....			36. 05	Maggie Brosnan.....			21. 28
Lizzie Connor.....			45. 50	Addie Julien.....			19. 12
Annie J. Taggart.....			29. 05	Flora J. Jacobs.....			19. 12
Eliza Hughes.....			42. 00	Annie Havenner.....			19. 12
Mary C. Sangston.....			38. 15	Mary R. Biggins.....			18. 46
Mamie Jones.....			33. 25	Julia Skelly.....			95. 42
Effie Richardson.....			28. 70	Gertie Crofort.....			79. 32
Annie M. McDonald.....			40. 95	Anna Buddington.....			65. 37
Annie E. Gross.....			34. 65	Mary Nolan.....			23. 61
Ella F. Long.....			45. 50	J. Wilson.....			142. 39
E. C. Mills.....			36. 75	M. M. Morrow.....			133. 61
Dora Love.....			31. 85	M. A. Ryan.....			131. 57
Mina M. Green.....			21. 30	J. Breslin.....			142. 04
Emma T. Wilkerson.....			22. 75	J. B. Forbes.....			106. 92
Mary Morrow.....			13. 30	Ida Dodge.....			144. 17
Kate Van Matre.....			27. 65	Kate V. Smoot.....			132. 68
Julia Barrett.....			24. 15	Mattie G. Sollers.....			134. 72
Missouri Goings.....			20. 31	Katie Snee.....			144. 46
Jennie Ferguson.....			13. 80	F. Chase.....			117. 59
R. E. Denny.....			22. 05	E. M. Nash.....			144. 04
Janie Naylor.....			9. 10	E. W. Smith.....			109. 77
Mary F. Terry.....			5. 25	Belle J. McIntyre.....			133. 87
S. W. Folk.....			19. 95	Annie Higgins.....			140. 93
M. V. Sutton.....			7. 70	Ellie C. Glasgow.....			66. 88
L. T. Morris.....			17. 85	Mamie Russell.....			56. 54
Lizzie Crowther.....			5. 60	Rose E. Dooley.....			49. 41
E. H. Clagett.....			5. 95	Ella C. Lackey.....			111. 03
Edith Hurdle.....			13. 65	Ellen Knapp.....			75. 50
Frank H. Benthall.....			14. 35	Lizzie Miller.....			47. 68
J. H. Garden.....			1. 75	Maggie Wilson.....			38. 78
Lizzie J. Farley.....			3. 50	S. E. Jackson.....			41. 73
Louise Covert.....			35	Mary E. Lynch.....			136. 21
George A. Erskine.....			3. 15	Ella F. Clements.....			134. 02
M. V. Worthington.....			2. 80	Winifred Cahill.....			98. 96
Mary E. Frazier.....			1. 75	Mary Lindsay.....			92. 83

No. 30.—Statement showing the number of persons employed in printing Annual Report (1888) of Commissioner of Agriculture, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
PIECE WORK—cont'd.				PIECE WORK—cont'd.			
Jennie Franklin			\$88.37	Etta Leonard			\$55.85
D. C. Toole			115.96	Lottie B. Tyson			56.66
J. A. Downing			120.50	M. Walsh			56.65
Jennie E. Manning			75.92	Katie Carpenter			13.17
Emma Woolsey			79.27	Mary Canty			13.17
B. F. Jeffries			91.47	Mary A. Mulquin			13.17
Jennie M. Murray			115.12	Annie Ashie			55.64
Ella Abern			98.50	Mary E. Buete			54.53
May Hoover			115.43	Katie Polk			54.64
Annie O'Hara			92.89	E. J. Ritchie			48.20
V. Henrick			124.78	Annie O'Brien			56.68
Clara Erck			32.69	Katie Walsh			54.76
Lena M. O'Leary			136.73	Adelaide Brooks			51.65
Paula De Vantier			98.22	C. Brelsford			27.75
A. V. Lee			45.13	L. L. Andrews			130.92
Miriam Meals			151.13	Bettie Baker			112.58
Rachel Richardson			66.63	Rose Walling			74.35
H. M. Esken			83.99	Mary E. Walsh			73.46
Alice V. Daly			91.12	S. D. Soper			58.20
Ella House			66.82	C. B. Whitt			9.13
M. G. Lillie			99.14	Laura A. Moore			103.25
Lillie Ward			3.65	L. H. Johnson			134.46
A. G. Fuller			129.48	M. Ambrose			130.30
P. C. Pape			129.50	Mary E. Ellsworth			82.71
Annie L. Scott			26.63	Mary M. Sprandel			133.75
Mary Queen			28.33	M. Clarkson			85.82
Laura Naef			32.88	M. Corbin			112.65
Lucinda Luckett			2.14	Emma L. Carrico			128.27
Rosa B. Ridgley			18.06	A. M. Ackerman			100.04
Laura V. Etter			102.14	Belle Gheen			113.12
G. A. Jones			2.10	A. Hutson			73.13
Annie G. Laird			60.53	E. Marsh			134.61
Martha E. Trenis			1.35	J. A. Burr			39.22
M. A. Sears			115.16	M. V. Pemberton			132.96
Katie Moran			69.85	Mary C. Ford			89.52
M. A. Burgess			67.61	Jessie R. Walton			57.09
D. M. Pratt			100.55	M. E. Snype			66.13
Jennie Fowler			100.55	Mary Anderson			87.65
J. Sibley			78.32	Sarah E. Poulton			110.84
Mary Hubbell			100.55	Maggie Pemberton			97.73
N. A. Godwin			15.82	K. R. Thomas			94.85
Mary Kraft			99.71	J. A. Hamilton			49.71
D. Lord			98.84	D. C. Brooke			132.51
A. Columbus			86.83	Annie Loring			131.26
Fanny Tilly			3.70	Jennie Thompson			68.23
May P. Hoffman			5.92	Lizzie Downie			133.39
Katie Waller			5.75	A. S. Adams			125.42
O. K. Burwell			5.92	Sarah E. J. Porter			120.80
Nellie R. Adams			5.92	M. Markam			134.39
Mary E. Wright			81.07	M. J. Coder			132.39
Carrie Schwartz			5.92	M. A. Ross			87.90
Lucy V. Ruby			5.92	M. V. Leckron			5.92
Maggie Leane			5.92	C. Fowler			5.92
M. A. Harper			5.60	Annie Keating			5.92
Ida S. Crapster			105.18	S. J. McLeod			78.97
M. E. Wilson			5.75	Marietta S. Brown			5.92
N. B. Franklin			60.76	Mary Pierre			5.92
Mary Brick			32.21	J. L. Dowling			5.92
J. A. Dougherty			48.57	H. Harris			5.92
M. A. O'Neill			60.77	Ida B. Cox			5.92
Nellie Brown			47.34	Mary F. Rowe			33.78
A. Rogers			62.30	Kate Cratty			5.92
D. P. Barrington			50.31	Mary A. Crellin			5.92
Jennie A. Carter			45.60	Mary A. McInenery			5.92
Katie Herbert			35.86	Fannie P. Snow			23.77
J. Connor			47.22	Edith A. Hicks			11.87
Hattie Richardson			22.26	Jennie Selden			37.73
Mary McGinnell			42.85	B. White			37.73
A. Boyce			44.45	Carrie Schneiderwind			37.73
Cassie A. Goodman			27.90	Bessie O'Connor			31.17
Mamie Gowans			6.60	M. Cammack			1.60
Edie Kaye			51.91	Florence Adam			35.30
N. Diggs			56.67	Kate M. Dausch			35.72
Alice M. Coughlin			13.17	Mary McCormick			109.84
M. T. Spaulding			51.83	Mary Owens			35.68

No. 30.—Statement showing the number of persons employed in printing Annual Report (1888) of the Commissioner of Agriculture, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
PIECE WORK—cont'd.				PIECE WORK—cont'd.			
Margaret Donohue			\$37. 73	F. C. Swearingen	.....	.....	\$8. 38
Annie Alley			56. 22	E. Thomas	.....	.....	51. 82
J. Barry			37. 73	E. Donnelly	.....	.....	74. 77
Dora Steele			37. 73	Mary O'Connell	.....	.....	17. 61
Agnes Renehan			32. 27	Katie Kelly	.....	.....	46. 05
Maggie J. Collins			37. 73	Sallie Faulkner	.....	.....	75. 95
Katie O'Mealey			10. 59	Maud McPherson	.....	.....	9. 89
Mary A. Brannan			37. 73	L. Hill	.....	.....	76. 76
Nannie Colton			37. 73	Eunice W. Wright	.....	.....	52. 08
Annie Russell			37. 73	Harriet A. Fugitt	.....	.....	79. 26
Lucy Johnston			31. 17	M. Lasselle	.....	.....	31. 37
Annie E. Riley			37. 73	Annie S. McCarter	.....	.....	81. 31
Elizabeth Hain			86. 29	Mary Curran	.....	.....	39. 30
Ida McNerhany			78. 91	Ella Mulcare	.....	.....	79. 18
Ida Dart			61. 65	M. E. McLean	.....	.....	51. 39
Sarah Harrington			73. 04	Laura V. Wright	.....	.....	78. 16
Susie Mylan			75. 68	A. Hodge	.....	.....	79. 09
Sarah Edmonds			62. 33	Kate Savage	.....	.....	79. 09
Agnes McMahon			78. 91				

No. 31.—Statement showing the number of persons employed in printing Annual Report (1889) of the Secretary of Agriculture during the fiscal year ended June 30, 1890, with the length of time each has been employed and the amount each has received.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK.				TIME WORK—cont'd.			
W. S. Baker	51½	.....	\$27. 29	James Nally	30	.....	\$8. 40
E. G. Darnell	8	.....	4. 24	R. A. Gray	153	.....	42. 84
J. M. Eggleston	96	.....	51. 13	Jennie Jackson	324	.....	68. 04
T. Buckey Taylor	108½	.....	57. 50	John S. Waugh	200	.....	50. 00
John W. Thomas	71½	.....	37. 89	Daniel J. Collins	188	.....	47. 00
A. D. Haynes	8	.....	3. 20	Flora E. Ballard	327	.....	68. 67
William F. Perkins	26½	.....	10. 60	R. E. Scott	296	.....	74. 00
F. C. Kemon	36	.....	18. 00	G. W. Nichols	289	.....	101. 13
C. F. Gilmore	12	.....	6. 00	Henry C. Watson	297	.....	103. 95
H. D. Pryor	66½	.....	66. 60	John F. Hogan	594	.....	178. 20
D. L. Murray	170	.....	68. 00	James Kernan	354	.....	88. 50
Mark H. Tolon	118	.....	47. 20	Samuel Wilkinson	594	.....	148. 50
George J. Woodgate	172½	.....	69. 00	E. W. Williams	589½	.....	147. 37
W. J. Cook	178	.....	71. 20	Thomas Shelton	592½	.....	148. 12
Frank Ayers	180	.....	72. 00	Michael Keebler	568	.....	142. 00
Samuel C. Hanlon	31	.....	12. 40	E. W. Godwin	581	.....	145. 25
James W. Rodgers	169	.....	67. 60	T. Keefe	568	.....	142. 00
C. W. Henshaw	188	.....	75. 20	John W. Hayes	578	.....	144. 50
B. F. Barrows	280½	.....	112. 20	F. C. Oberholtz	.....	9	36. 00
R. S. Peed	307½	.....	120. 60	W. F. Webster	208	.....	83. 20
R. J. Hale	410½	.....	164. 20	Donald McCathran	118½	.....	41. 47
D. M. Sandidge	124½	.....	49. 80	John W. Hayes	174	.....	43. 50
E. A. M. Lawson	247½	.....	99. 20	Mamie Russell	208	.....	52. 00
Jed. Shaw	173	.....	69. 20	Clara B. Harrison	227	.....	56. 75
J. H. Mowbray	80	.....	32. 00	M. C. Hood	229	.....	57. 25
William F. Hinkel	173	.....	69. 20	John W. Dutton	152	.....	45. 60
Charles C. Russell	177	.....	70. 80	D. C. Hathaway	73	.....	21. 90
A. W. Tebbetts	64	.....	33. 92	Edward Welch	175	.....	43. 75
J. N. Hall	62	.....	24. 80	James Donohue	127	.....	31. 75
Philip Nackman	60½	.....	24. 20	W. H. Triplett	72	.....	25. 20
A. L. Stipe	62	.....	24. 80	M. Fleming	103	.....	25. 75
Thomas D. Bennett	806	.....	403. 00	Agnes Roberts	72	.....	18. 00
James E. Young	796	.....	248. 75	John Johnson	32	.....	9. 60
M. A. Davis	505½	.....	141. 54	C. D. Parsons	612	.....	324. 36
David Hickey	737½	.....	221. 25	H. A. Gilbert	614½	.....	245. 80
W. C. Martin	461	.....	135. 30	Edw'd C. Maher	722	.....	288. 80
Thomas H. Morgan	508	.....	152. 40	Frank Frazer	196½	.....	78. 60
F. S. Ratcliffe	593	.....	177. 90	Cecelia A. Moore	192	.....	40. 32

No. 31.—Statement showing the number of persons employed in printing Annual Report (1889) of the Secretary of Agriculture, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK—cont'd.				TIME WORK—cont'd.			
Julia A. Murrell.....	174½		\$36.64	Thos. Flint, jr.....	158½		\$63.40
Douglas Reid.....	376		94.00	Patrick H. Markey....	168		67.20
Fred Hudson.....	693		173.25	George Henning.....	88		35.20
Thos. Conway.....	678		169.50	C. W. Moore.....	82½		33.00
C. S. Mills.....	192		57.60	Edward J. Gilday.....	88		35.20
Geo. F. McInturff.....	177		44.25	John C. Woodell.....	165		66.00
Wm. Donath.....	722		180.50	David A. Thompson....	168		67.20
R. A. Porter.....	722		208.80	Geo. K. White.....	168		67.20
Wm. H. Bush.....	692½		173.12	W. F. Clarkson.....	168		67.20
James Clements.....	724		181.00	R. W. Moore.....	23		9.20
Jos. Carter.....	579		144.75	Jas. D. Conner.....	166		66.40
D. E. Ritchie.....	240		72.00	T. F. Pendel.....	165		66.00
J. M. McGibbon.....	206		61.80	Bernard J. Smith.....	135½		54.20
W. P. Chroniger.....	272		68.00	George Douglas.....	165		41.25
W. J. Hart.....	317		126.80	Mary F. Terry.....	168		38.64
Dennis J. O'Leary.....	335		134.00	S. M. Cornell.....	159½		36.68
Veronia Brandner.....	322½		67.72	Henry T. Houck.....	160		64.00
A. L. Wood.....		22	126.50	E. S. Luby.....	160		64.00
W. L. Griggs.....	176		88.00	R. M. Phipps.....	160		64.00
D. F. Anderson.....	176		88.00	Ernest R. Austin.....	80		32.00
G. O. Barnes.....	172		68.80	F. W. Selbach.....	160		64.00
Patrick Sweeney.....	176		70.40	Martin Miller.....	159		63.60
Florence Hoffman.....	173½		54.22	Ellen Donaldson.....	144		33.12
Ella V. Evans.....	176		40.48	Katie A. Murphy.....	148½		34.15
Minnie Osborne.....	170		39.10	Annie Eckart.....	150½		34.61
May Barnett.....	157		36.11	Rachel Ellinger.....	149		34.27
Mary Morrow.....	170½		39.21	M. A. Nelson.....	152		34.96
Jennie Ferguson.....	157½		36.22	Margaret Morris.....	152		34.96
Hettie Russell.....	136		31.28	John Stoll.....	136		54.40
C. M. Post.....	176		40.48	John C. Browne.....	56		22.40
Clara B. Carter.....	176		40.48	Frank Bertossa.....	55½		22.20
Oliva J. Bond.....	88		20.24	Milton Phillips.....	56		22.40
Ellen B. Quayle.....	176		40.48	John J. Burns.....	136		54.40
E. Finlin.....	174½		40.13	A. C. Deans.....	128		51.20
Eliza McElfresh.....	168		38.64	James Clinton.....	136		54.40
M. J. Stanley.....	176		40.48	James O. Amoss.....	117½		47.00
Elizabeth Mangan.....	175½		40.36	J. Wilson Clark.....	55½		22.00
M. L. Andrews.....	173½		39.90	Richard C. Lohmeyer..	56		22.40
Ettie S. Ellis.....	175		40.25	Horace C. Dowling....	56		22.40
K. Stevens.....	176		40.48	Wm. A. Poist.....	136		54.40
Annie Taylor.....	160		36.80	Wm. Gilliard.....	136		54.40
M. H. Core.....	151		34.73	G. A. Ellegood.....	128		51.20
Florence E. Sener.....	167½		38.52	John Masterson.....	83		33.20
Mollie Farnsworth.....	176		40.48	John B. Smithers.....	136		54.40
Carrie V. Sewall.....	165½		38.06	George H. Maurer.....	125		50.00
J. H. Garden.....	172		39.55	George Finch.....	52		20.80
Josie W. Robinson.....	96		22.08	J. F. Glenn.....	56		22.40
Jennie Dorsey.....	93		21.39	Jno. L. Bentzler.....	56		22.40
Hattie Z. Horn.....	176		40.48	C. Skeen.....	16		3.68
Kate O'Gorman.....	174		40.01	Missouri Goings.....	48		11.04
E. S. Mullen.....	174½		40.13	M. Kinsella.....	48		11.04
J. K. Hardesty.....	176		61.60	Ida P. Belcher.....	48		11.04
Geo. L. Ready.....	175		61.25	Henry Francis.....	32		12.80
A. D. Coleman.....	176		61.60	John Pridgeon.....	32		12.80
James Cavanaugh.....	176		55.00	Frank L. Cornwell.....	27		10.80
F. A. West.....	176		52.80	C. M. Knott.....	32		12.80
Curtis Clark.....	169		42.25	Robt. E. McCullough..	32		12.80
Isiah Lancaster.....	171		42.75	John F. Van Horn.....	32		12.80
Geo. W. Duvall.....	163½		40.87	George W. Engel.....	32		12.80
W. Rotenburg.....	155½		38.87	H. A. Scheuerman.....	80		32.00
J. W. Freeman.....	167½		41.87	George Wright.....	80		32.00
Geo. Lusky.....	161		40.25	John O'Reilly.....	80		32.00
N. A. Colbert.....	176		44.00	John E. Knight.....	80		32.00
N. Q. Lowd.....	168		67.20	Jane E. Minor.....	80		25.00
R. B. Harford.....	160		64.00	Kate O'Connor.....	79		18.17
Dennis Toomey.....	168		67.20	A. A. Colclessner.....	80		18.40
J. W. Haslett.....	162		64.80	Lizzie J. Farley.....	71½		16.44
J. W. Beall.....	168		67.20	Charles B. Amazeen...	80		32.00
Edwin Pumphrey.....	168		67.20	E. J. Harper.....	203		50.75
G. J. Nash.....	88		35.20	A. A. West.....	210		52.50
Arthur Simmons, jr....	168		67.20	Lizzie W. Gray.....	216		54.00
F. C. Rudland.....	168		67.20	A. Hughes.....	581		145.25
Andrew Melville.....	96		38.40	Agnes Landrigan.....	304		76.00
P. J. Sullivan.....	168		67.20	Andrew Taff.....	296		158.40
Robt. H. Zimmerman...	168		67.20	J. J. Verser.....	175		61.25

No. 31.—Statement showing the number of persons employed in printing Annual Report (1889) of the Secretary of Agriculture, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK—cont'd.				PIECE WORK—cont'd.			
S. K. Coster	592	.....	\$177.60	Maggie Curtis .....	.....	.....	\$8.05
Wm. J. Rountree	120	.....	30.00	Emma Maher .....	.....	.....	8.05
S. T. Satterfield	128	.....	32.00	Rosa B. Kerney .....	.....	.....	8.05
S. Hess	128	.....	32.00	J. A. Seward .....	.....	.....	8.05
V. M. Evans	128	.....	32.00	Martha E. Lalor .....	.....	.....	8.05
L. H. Davis	210	.....	52.50	Annie A. Hurley .....	.....	.....	8.05
Belle Gates	570½	.....	142.62	Emily O. Feltham .....	.....	.....	7.35
Dora C. Reicks	573	.....	143.25	Josephine Plumer .....	.....	.....	8.05
Mary R. Biggins	578	.....	144.50	Maggie Whaley .....	.....	.....	7.00
PIECE WORK.				A. J. Bowie .....	.....	.....	7.35
Maggie Murphy			5.95	S. Bailey .....	.....	.....	8.05
Millie Parker			8.05	Millie J. Rockwell .....	.....	.....	8.05
L. A. Sheperd			7.35	Mathilde Guyol .....	.....	.....	5.60
M. E. Dow			8.05	M. M. Cole .....	.....	.....	7.35
May Joyce			8.05	E. G. Charles .....	.....	.....	3.85
Margaret Shields			8.05	Alice A. Brittain .....	.....	.....	7.70
M. E. Eggleston			6.30	Belle Halliday .....	.....	.....	8.05
Hattie McVile			8.05	M. A. Lenihan .....	.....	.....	8.05
Marian McGivern			8.05	Kate R. Smith .....	.....	.....	7.70
M. Purcell			8.05	Kate A. Falconer .....	.....	.....	7.70
Kate Dowden			8.05	Louisa Henry .....	.....	.....	8.05
Mary A. Smith			6.30	Maud Dubant .....	.....	.....	7.70
Elizabeth A. Bell			7.70	L. E. Windsor .....	.....	.....	6.65
A. C. Francis			8.05	Mary E. Hill .....	.....	.....	8.05
Ada Burr			8.05	Annie Walters .....	.....	.....	8.05
Clara J. Robinson			8.05	Amelia Moreno .....	.....	.....	8.05
Georgiana Groshon			8.05	Mary A. Murray .....	.....	.....	7.70
Carrie E. Lewis			8.05	Clara E. Hutton .....	.....	.....	8.05
Kate Fleming			5.95	Ella F. Clements .....	.....	.....	110.63
Mary Chamberlin			7.70	Winifred Cahill .....	.....	.....	105.74
Rosie Sullivan			7.00	Mary Lindsay .....	.....	.....	111.45
Ida Jones			7.70	Jennie Franklin .....	.....	.....	110.84
Lizzie Connor			8.05	D. C. Toole .....	.....	.....	114.85
Eliza Hughes			7.00	J. A. Downing .....	.....	.....	87.75
Mary C. Sangston			7.70	Jennie E. Manning .....	.....	.....	107.63
Mamie Jones			6.65	Emma Woolsey .....	.....	.....	114.26
Annie M. McDonald			8.05	May Hoover .....	.....	.....	109.80
Ella F. Long			7.70	Annie O'Hara .....	.....	.....	113.12
E. C. Mills			8.05	V. Henrick .....	.....	.....	111.52
Dora Love			2.45	Clara Erck .....	.....	.....	116.05
Mina M. Green			7.40	Paula De Vantier .....	.....	.....	110.06
Donna Buchanan			8.05	Miriam Meals .....	.....	.....	105.12
Mary Farrell			8.05	Rachel Richardson .....	.....	.....	44.85
Sallie Macnichol			7.35	H. M. Eskew .....	.....	.....	53.09
Ella McCullum			8.05	Alice V. Daly .....	.....	.....	58.56
Sue E. Stevens			8.05	Ella House .....	.....	.....	53.05
Gertrude B. Stewart			8.05	M. G. Lillie .....	.....	.....	50.52
Laura L. Grimes			8.05	A. G. Fuller .....	.....	.....	55.10
Annie M. Cavanagh			8.05	P. C. Pape .....	.....	.....	63.49
Kate Decker			8.05	Lucinda Luckett .....	.....	.....	49.26
Amelia Fisher			7.00	Laura V. Etter .....	.....	.....	55.68
Mary A. Reardon			6.65	G. A. Jones .....	.....	.....	49.46
Carrie A. Booth			8.05	Annie G. Laird .....	.....	.....	42.55
Mary A. Prather			7.35	Martha E. Trenis .....	.....	.....	109.11
Sara Collins			7.70	M. A. Sears .....	.....	.....	36.87
Mary J. Richards			7.35	Katie Moran .....	.....	.....	22.74
Alice Reicks			8.05	M. A. Burgess .....	.....	.....	55.50
Rebecca Orr			8.05	D. M. Pratt .....	.....	.....	55.36
Kate Van Matre			8.05	Jennie Fowler .....	.....	.....	55.68
Julia Barrett			8.05	J. Sibley .....	.....	.....	55.68
R. E. Denny			8.05	Mary Hubbel .....	.....	.....	47.48
S. W. Folk			6.65	Mary Kraft .....	.....	.....	55.35
L. T. Morris			7.70	D. Lord .....	.....	.....	55.51
Edith Hurdle			8.05	A. Columbus .....	.....	.....	55.68
Frank H. Benthall			6.30	Nellie R. Adams .....	.....	.....	47.85
Kate Kelly			8.05	Mary E. Wright .....	.....	.....	47.97
Mary Lane			8.05	Carrie Schwartz .....	.....	.....	47.84
Ida C. Lusby			8.05	Maggie Leane .....	.....	.....	48.48
Belle Gifford			7.00	Ida S. Crapster .....	.....	.....	53.11
Katie McCarteen			8.05	M. E. Wilson .....	.....	.....	49.46
Mildred Thornton			8.05	N. B. Franklin .....	.....	.....	43.52
Minnie E. Martin			7.00	J. A. Dougherty .....	.....	.....	39.73
Mary S. Dulin			8.05	M. A. O'Neill .....	.....	.....	37.33
				Nelie Brown .....	.....	.....	43.52
				A. Rogers .....	.....	.....	43.53

No. 31.—Statement showing the number of persons employed in printing Annual Report (1889) of the Secretary of Agriculture, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
PIECE WORK—cont'd.				PIECE WORK—cont'd.			
Jennie A. Carter.....			\$43.53	Mattie G. Hall.....			\$49.07
Hattie Richardson.....			43.38	Laura Shelton.....			48.21
Rose Walling.....			24.19	J. M. Conroy.....			45.12
Laura A. Moore.....			4.23	Leona Hutchinson.....			49.36
L. H. Johuson.....			61.01	Lucy Chadwell.....			65.48
M. Ambrose.....			57.10	Bessie M. Green.....			45.84
Mary E. Ellsworth.....			60.72	M. V. Lee.....			46.90
Mary M. Sprandel.....			63.49	Fannie Turton.....			46.42
M. Clarkson.....			63.49	H. L. Stiles.....			42.33
M. Corbin.....			63.49	Rose McClelland.....			63.46
Emma L. Carrico.....			64.49	J. A. Stein.....			63.14
A. M. Ackerman.....			63.49	M. A. Orme.....			52.43
Belle Gheen.....			63.49	M. Reld.....			57.24
A. Hutson.....			61.38	Sadie Brodrick.....			55.44
E. Marsh.....			63.49	Sarah Dodge.....			45.50
J. A. Burr.....			63.49	Lida L. Smith.....			47.71
M. V. Pemberton.....			65.22	Kate A. Tompkins.....			58.35
Mary C. Ford.....			65.57	Katie O'Mealy.....			107.25
Jessie R. Walton.....			34.37	Sarah Harrington.....			24.19
M. E. Snype.....			13.62	Maud McPherson.....			38.95
Sarah E. Poulton.....			63.30	Harriet A. Fugitt.....			24.19
Maggie Pemberton.....			65.57	Annie S. McCarter.....			24.19
K. R. Thomas.....			64.59	M. E. McLean.....			24.19
D. C. Brooke.....			65.57	Katie Waller.....			44.18
Annie Loring.....			65.57	M. E. Hoover.....			53.52
Jennie Thompson.....			51.27	W. A. Rowzee.....			18.51
Lizzie Downie.....			39.18	Lillie E. Bull.....			53.27
A. S. Adams.....			63.46	Sabina Jordan.....			53.45
Sarah E. J. Porter.....			39.18	M. J. Griswold.....			53.45
M. Markham.....			63.46	J. F. Rose.....			52.05
M. J. Coder.....			61.69	Annie Burrus.....			53.45
M. A. Ross.....			63.46	Gertrude V. Withers.....			53.45
Annie Keating.....			24.37	Mary L. Lamar.....			52.48
Marietta S. Brown.....			43.40	E. H. Stanton.....			5.30
Mary Pierre.....			48.10	Ella Goodsir.....			53.45
J. L. Dowling.....			16.76	Georgie I. Carter.....			53.45
H. Harris.....			47.55	E. Young.....			36.57
Mary F. Rowe.....			17.78	Addie Jullien.....			24.19
Kate Cratty.....			46.24	Flora J. Jacobs.....			24.19
Mary A. Crellin.....			48.22	Julia Skelly.....			53.45
Mary McGinnell.....			35.84	Gertie Crofort.....			24.19
A. Boyce.....			42.22	E. W. Smith.....			18.40
N. Diggs.....			44.85	Ellie C. Glasgow.....			53.45
Alice M. Coughlin.....			43.52	Ellen Knapp.....			7.75
E. J. Ritchie.....			44.68	Lizzie Miller.....			43.52
Annie O'Brien.....			38.65	Maggie Wilson.....			43.36
Katie Walsh.....			44.84	S. J. May.....			58.35
C. Brelsford.....			34.85	Laura A. Moore.....			25.54
L. L. Andrews.....			78.81	M. A. Pester.....			31.65
Bettie Baker.....			102.86	Mamie Lawlor.....			17.76
Lora E. Collar.....			109.20	Katie Freeman.....			36.32
Emma Frush.....			93.33	Lillie M. Petty.....			21.71
Julia Matthews.....			38.69	Bessie Cole.....			24.19
Addia Patterson.....			84.55	Nellie Holland.....			24.19
Anna J. Bellew.....			48.39	Lizzie Schaefer.....			24.19
Agnes McGee.....			48.04	Anna E. Buddington.....			24.19
Jannette E. Wilson.....			47.90	Letitia Smith.....			24.19
Missouri G. Butler.....			49.20	Emma B. Thompson.....			24.19
Sarah Johnson.....			48.95	Nellie Black.....			24.19
L. D. Christmas.....			49.43	Effie T. Sansbury.....			24.19
J. Culhane.....			49.08	Fannie Thompson.....			24.19
Mary F. Hodge.....			46.50	Sadie Orr.....			24.19
Maria B. Fletcher.....			48.71	Mary Smith.....			24.19
C. E. Madden.....			49.42	Mary E. Cooper.....			24.19
Maggie O'Hare.....			48.37	Edna G. Allen.....			24.19
Minnie F. Gudgin.....			43.88	Katie Halsey.....			24.19
Mary E. Roach.....			47.12	Annie Green.....			24.19
H. M. Lauxman.....			48.97	Minnie Herbst.....			24.19
C. A. Andrews.....			46.47	Fannie E. Carter.....			24.19
Jennie Harrison.....			47.46	Adelia Cook.....			24.19
E. W. Marshall.....			47.60	S. Martin.....			24.19
Jennie E. Hewin.....			49.42	Delia Harper.....			31.10
Dora B. Sims.....			13.03	Fannie Green.....			20.80
Ella Bythewood.....			46.75				

No. 32.—Statement showing the number of persons employed in the publication of the Tenth Census reports during the fiscal year ended June 30, 1890, with the length of time each has been employed and the amount each has received.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK.				PIECE WORK—cont'd.			
David H. Morgan	48	.....	\$19. 20	Mary Farrell .....	.....	.....	\$0. 92
Nellie T. V. Lyons	45	.....	9. 45	Sallie Macnichol .....	.....	.....	. 92
John Rickells, jr.	24	.....	6. 00	Ella McCullum .....	.....	.....	. 92
PIECE WORK.				Sue E. Stevens .....	.....	.....	. 92
Anna Erb			. 92	Laura L. Grimes .....	.....	.....	. 92
Louise Henry			. 92	S. K. Feltham .....	.....	.....	. 92
Maud Dubant			. 92	Annie M. Cavanagh .....	.....	.....	. 92
L. E. Windsor			. 92	Kate Decker .....	.....	.....	. 92
Annie Walters			. 92	Amelia Fisher .....	.....	.....	. 92
Clara E. Hutton			. 92	Margaret Fern .....	.....	.....	. 92
Maggie Murphy			. 92	Mary A. Reardon .....	.....	.....	. 92
Millie Parker			. 92	Carrie A. Booth .....	.....	.....	. 46
Nannie Daniel			. 92	Martha Stewart .....	.....	.....	. 92
L. A. Shepherd			. 92	Mary A. Prather .....	.....	.....	. 92
M. E. Dow			. 92	Sara Collins .....	.....	.....	. 92
Mary Joyce			. 46	Mary Richards .....	.....	.....	. 92
Margaret Shields			. 92	Alice Reicks .....	.....	.....	. 92
M. E. Eggleston			. 92	Maggie Whaley .....	.....	.....	. 92
Hattie McVile			. 92	Gertrude M. Martin .....	.....	.....	. 92
C. Durham			. 92	A. J. Bowie .....	.....	.....	. 92
Marian McGivern			. 92	Sarah H. Stevens .....	.....	.....	. 92
M. Purcell			. 92	Martha Wilkins .....	.....	.....	. 46
Kate Dowden			. 92	Millie J. Rockwell .....	.....	.....	. 46
Cheney Swain			. 92	Mathilde Guyol .....	.....	.....	. 46
Mary Padian			. 92	M. M. Cole .....	.....	.....	. 92
Mary A. Smith			. 92	E. G. Charles .....	.....	.....	. 92
A. C. Francis			. 92	Alice A. Brittain .....	.....	.....	. 92
Ada Burr			. 92	Belle Halliday .....	.....	.....	. 92
Clara J. Robinson			. 92	M. A. Lenihan .....	.....	.....	. 92
Julia A. Wolff			. 92	Kate R. Smith .....	.....	.....	. 92
Georgiana Groshon			. 92	Kate A. Falkener .....	.....	.....	. 92
Carrie E. Lewis			. 92	Mary E. Black .....	.....	.....	. 46
Mary Mullen			. 92	M. J. Yerby .....	.....	.....	. 46
Katie Fleming			. 92	Ida Jones .....	.....	.....	. 92
Mary Chamberlin			. 46	Ada H. Barker .....	.....	.....	. 46
Kate M. Price			. 92	Annie E. Robb .....	.....	.....	. 92
Rosie Sullivan			. 46	Lizzie Connor .....	.....	.....	. 92
Minnie E. Burford			. 92	Annie J. Tagart .....	.....	.....	. 46
Josie Wright			. 92	Eliza Hughes .....	.....	.....	. 92
M. E. Lenman			. 92	Mary C. Sangston .....	.....	.....	. 46
Mary F. Dove			. 46	Mamie Jones .....	.....	.....	. 46
Donna Buchanan			. 92	Effie Richardson .....	.....	.....	. 46
				Annie M. McDonald .....	.....	.....	. 92
				Mina M. Green .....	.....	.....	. 92

No. 33.—Statement showing the number of persons employed in printing Fourth Annual Report of Commissioner of Labor, during the fiscal year ended June 30, 1890, with the length of time each has been employed and the amount each has received.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK.				TIME WORK—cont'd.			
Elizabeth Mangan.....	96	.....	\$22. 08	W. L. Griggs.....	101	.....	\$50. 50
M. L. Andrews.....	32	.....	7. 36	C. R. Sherwood.....	106½	.....	53. 25
Hettie Russell.....	96	.....	22. 08	R. B. Harford.....	98	.....	39. 20
C. M. Post.....	96	.....	22. 08	W. Breckinridge.....	98	.....	39. 20
M. A. Nelson.....	96	.....	22. 08	J. W. Beall.....	98	.....	39. 20
Clara E. Carter.....	72	.....	16. 56	Edwin Pumphrey.....	97½	.....	39. 00
Olivia J. Bond.....	95½	.....	21. 96	Arthur Simmons, jr.....	94	.....	37. 60
Geo. L. Ready.....	84½	.....	29. 57	P. J. Sullivan.....	84½	.....	33. 80
A. D. Coleman.....	86	.....	30. 10	John J. Burns.....	96	.....	38. 40
F. A. West.....	88	.....	26. 40	J. J. McDonough.....	91	.....	36. 40
Jno. W. Freeman.....	84	.....	21. 00	Robert H. Zimmerman.....	96	.....	38. 40
A. L. Wood.....	.....	13½	76. 91	J. H. Keenan, jr.....	96	.....	38. 40

No. 33.—Statement showing the number of persons employed in printing Fourth Annual Report of Commissioner of Labor, during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK—cont'd.				TIME WORK—cont'd.			
Patrick H. Markey	91	.....	\$36.40	Jennie Ferguson	71	.....	\$16.33
Joseph T. Gillin	89½	.....	35.80	S. M. Cornell	80	.....	18.40
Jas. A. Ryan	96	.....	38.40	Annie Taylor	76½	.....	17.69
John A. Flather	96	.....	38.40	M. H. Core	80	.....	18.40
Ernest R. Austin	95	.....	38.00	Hattie Z. Horn	87½	.....	20.12
Wm. Marshall	96	.....	38.40	J. H. Garden	96	.....	22.08
F. W. Selbach	96	.....	38.40	Kate O'Gorman	96	.....	22.08
Wm. L. Hettinger	61	.....	24.40	E. S. Mallery	96	.....	22.08
Wm. A. Poist	96	.....	38.40	Jennie Dorsey	15½	.....	21.96
Wm. Giliard	80	.....	32.00	Minnie W. Brace	93	.....	21.39
H. C. Fish	101	.....	40.40	K. B. Throckmorton	19	.....	4.37
Ellen Donaldson	87½	.....	20.12	Kate O'Connor	95	.....	21.85
Ettie S. Ellis	88	.....	20.24	H. Hall	104½	.....	26.12
Ellen B. Quayle	88	.....	20.24	Curtis Clark	104½	.....	26.12
S. A. Kennedy	23½	.....	5.40	G. F. White	78	.....	19.50
Katie A. Murphy	80	.....	18.40	George W. Duvall	104½	.....	26.12
Kate Cantine	80	.....	18.40	Geo. Luskey	104½	.....	26.12
E. Finlen	80	.....	18.40	James O. Amoss	89	.....	35.60
Eliza J. McElfresh	80	.....	18.40	J. Wilson Clark	95	.....	38.00
Annie Eckart	77	.....	17.71	R. W. Moore	97½	.....	39.00
Ella V. Evans	80	.....	18.40	Jas. D. Connor	96½	.....	38.60
M. J. Stanley	80	.....	18.40	T. F. Pendel	97½	.....	39.00
Minnie Osborne	78½	.....	18.05	George G. Nalley	97½	.....	39.00
May Barnett	80	.....	18.40	Patrick Sweeny	93	.....	37.20
Ira E. Cole	110	.....	49.50	G. O. Barnes	88	.....	35.20
John H. Robb	104	.....	41.60	George Finch	80	.....	32.00
Wm. H. Weber	110	.....	44.00	Mary E. Cornell	53	.....	12.19
James D. McKinnon	92	.....	36.80	Josie W. Robinson	77	.....	17.71
J. H. Furbershaw	104	.....	41.60	Bernard J. Smith	32	.....	12.80
John F. Clarkson	104	.....	41.60	Jas. A. Stockman	47	.....	18.80
David H. Moran	104	.....	41.60	W. C. Wilton	32	.....	15.04
Charles J. Vagt	96	.....	38.40	T. J. McLaughlin	32	.....	15.04
J. C. Watson	104	.....	41.60	Frank S. Lanahan	32	.....	15.04
John Burnside	104	.....	41.60	H. J. Carey	32	.....	15.04
M. E. Flanagan	104	.....	41.60	W. R. Westman	48	.....	22.56
A. W. Graham	104	.....	41.60	T. W. Shomo	32	.....	15.04
Emma Long	101	.....	21.21	G. Abramson	48	.....	22.56
Amelia Cromelein	101	.....	21.21	Jas. Breen	32	.....	15.04
Mary Jackson	96	.....	20.16	J. S. Smith	32	.....	15.04
Joanna Corridon	96	.....	20.16	Martin Mangold	48	.....	22.56
Susie V. Sinon	104	.....	21.84	W. S. Whitmore	48	.....	22.56
Mary O'Brien	104	.....	21.84	Michael Shaen	47	.....	22.09
Annie Gaughran	104	.....	21.84	Thad. Baden	32	.....	12.80
Annie Chapman	103½	.....	21.73	Thos. B. Waters	48	.....	19.20
Maggie McKie	104	.....	21.84	C. H. Stout	30	.....	12.00
Ella McGraw	16	.....	3.36	H. Dunning	48	.....	19.20
Bridget McNamara	104	.....	21.84	John Babcock	32	.....	12.80
Fannie Beamer	104	.....	21.84	John J. Fitzgerald	16	.....	7.04
Elizabeth Davis	104	.....	21.84	John J. O'Brien	16	.....	7.04
M. Dellamico	104	.....	21.84	Geo. H. Thayer	16	.....	7.04
Bessie Stuart	104	.....	21.84	W. H. Parker	16	.....	7.04
Cath'ine Scheimerhorn	104	.....	21.84	Byron Waters	16	.....	7.04
Nellie Hopper	104	.....	21.84	Thomas Hefferman	16	.....	5.60
Delia Cremen	104	.....	21.84	Chas. F. Whitlock	16	.....	5.60
Annie R. Jewett	104	.....	21.84				
A. W. Potter	104	.....	21.84	PIECE WORK.			
Rose Carrothers	104	.....	21.84	J. Wilson			5.08
Henrietta Tompkins	104	.....	21.84	M. M. Morrow			2.53
Lizzie Watters	92	.....	19.32	M. A. Ryan			5.10
Catherine Burke	95	.....	19.95	J. Breslin			5.09
Richard Savage	106	.....	26.50	J. B. Forbes			5.08
Daniel C. Ray	125½	.....	31.37	Ida Dodge			5.08
G. W. King	106	.....	26.50	Kate V. Smoot			5.08
Henry Payne	46½	.....	11.62	Mattie G. Sollers			5.08
Michael Keebler	104	.....	26.00	Katie Snee			5.08
E. F. Degges	106	.....	26.50	F. Chase			5.08
F. S. Ratcliffe	124	.....	37.20	Ellen Handiberon			5.08
Stephen Caldwell	119	.....	35.70	E. M. Nash			5.08
J. R. Jones	68½	.....	17.12	E. W. Smith			3.60
Margaret Morris	80	.....	18.40	Belle J. McIntyre			5.08
K. Stevens	80	.....	18.40	Maggie Wilson			27.02
Mary F. Terry	80	.....	18.40	N. Diggs			28.47
Mary Morrow	80	.....	18.40	M. T. Spalding			28.47
Maggie McNamara	80	.....	18.40	Lottie B. Tyson			28.47
Annie J. Fagart	69	.....	15.87				

No. 33.—Statement showing the number of persons employed in printing *Fourth Annual Report of Commissioner of Labor*, during the fiscal year, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
PIECE WORK—cont'd.				PIECE WORK—cont'd.			
Annie Ashe.....			\$12. 20	Kate Cratty.....			\$24. 77
J. Hitchcox.....			28. 46	Mary A. Crellin.....			27. 10
Mary E. Buete.....			28. 46	Fannie Tilly.....			28. 90
E. J. Ritchie.....			28. 47	Katie Waller.....			33. 24
Kate Walsh.....			23. 84	O. K. Burwell.....			32. 06
Adelaide Brooks.....			28. 47	Nellie R. Adams.....			34. 85
Mary Nolan.....			28. 47	Carrie Schwartz.....			32. 50
Katie Polk.....			21. 42	Lucy V. Ruby.....			35. 27
Mary Brick.....			33. 37	Maggie Leane.....			29. 85
J. A. Dougherty.....			33. 00	A. V. Lee.....			39. 09
M. A. O'Neill.....			33. 37	M. E. Wilson.....			30. 13
A. Rogers.....			33. 04	Lillie Ward.....			10. 62
D. P. Barrington.....			30. 38	Annie V. Hay.....			11. 62
Jennie A. Carter.....			33. 36	Ida Rabbitt.....			40. 32
Mary McGinnell.....			32. 68	Martha E. Tremis.....			31. 97
A. Boyce.....			9. 59	Annie J. Bellew.....			28. 13
Effie Kaye.....			33. 37	Hannah Coyle.....			16. 21
Mary F. Rowe.....			28. 86	M. A. Orme.....			29. 25
S. E. Jackson.....			30. 37	Agnes McGee.....			34. 26
Cassie A. Goodman.....			30. 75	Missouri G. Butler.....			27. 03
C. Fowler.....			27. 11	Charlotte Spears.....			17. 29
Annie Keating.....			21. 68	Sarah Johnson.....			18. 08
Marietta S. Brown.....			27. 47	L. D. Christmas.....			23. 44
Mary Pierre.....			8. 49	J. Culhane.....			18. 36
J. L. Dowling.....			34. 47	Fannie Maxwell.....			16. 50
H. Harris.....			30. 55	Mary F. Hodge.....			10. 09
Lucinda Luckett.....			38. 97	Maria B. Fletcher.....			12. 81
G. Webster.....			13. 57	Emma St. Clair.....			17. 61
F. Pope.....			12. 45	Annie O'Brien.....			20. 95
E. Wells.....			8. 09	Rosa B. Ridgley.....			15. 91
A. Dutrow.....			8. 19	Jannette E. Wilson.....			16. 31
Mamie Sheiry.....			10. 23	Emma F. Woodend.....			24. 06
Ella Bagley.....			8. 44	Maggie Morgan.....			22. 12
Nellie S. Manly.....			11. 62	J. E. Segerson.....			24. 60
V. A. Jones.....			13. 43	A. Piggott.....			13. 69
Mary Reapsomer.....			13. 02	Pearl Peticolos.....			24. 61
Mary M. Dickinson.....			6. 29	M. E. Murray.....			24. 88
Honora Lynch.....			7. 50	C. Lusby.....			22. 87
N. B. Franklin.....			4. 93	Julia E. Plant.....			22. 13
Nellie Brown.....			2. 38	Florence Gates.....			24. 08
J. Connor.....			11. 60	C. Maus.....			22. 16
Etta Leonard.....			4. 17	Ella B. Cook.....			9. 00
M. Walsh.....			2. 12	Ella C. Wetherall.....			24. 56
C. Brelsford.....			6. 50	Annie Waters.....			24. 86
Susie E. Johnson.....			27. 87	Carrie T. Shelton.....			18. 37
Ida B. Cox.....			34. 76	M. V. Leckron.....			14. 56

No. 34.—Statement showing number of persons employed in printing *Annual Bulletins* (1887) of Bureau of Ethnology for the fiscal year ended June 30, 1890, with the length of time each has been employed and the amount each has received.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK.				PIECE WORK—cont'd.			
Frank Fraser.....	12		\$4. 80	M. A. Burgess.....			\$2. 18
Julia Murrell.....	24		5. 04	D. M. Pratt.....			2. 18
Douglas Reid.....	12		3. 00	Laura V. Etter.....			2. 18
PIECE WORK.				Jennie Fowler.....			2. 18
Emma F. Woodend.....			2. 98	J. Sibley.....			2. 18
G. Webster.....			4. 14	Mary Hubbell.....			2. 18
Maggie Morgan.....			2. 81	Ella House.....			2. 18
J. E. Segerson.....			3. 05	Mary Kraft.....			2. 18
				D. Lord.....			2. 18
				A. Columbus.....			2. 18

No. 34.—Statement showing number of persons employed in printing Annual Bulletins (1887) of Bureau of Ethnology, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
PIECE WORK—cont'd.				PIECE WORK—cont'd.			
Ella Mitchell			\$2.18	E. H. Stanton			\$2.18
Lillie E. Bull			2.18	Ella Goodsir			2.18
Sabina Jordan			2.18	Georgie L. Carter			2.18
M. J. Griswold			2.18	E. Young			2.18
M. G. Lillie			1.36	Ida S. Crapster			2.18
J. F. Rose			2.18	Julia Skelly			2.18
H. M. Eskew			2.18	Mary E. Wright			2.18
Annie Burrus			2.18	S. J. McLeod			2.18
Gertrude V. Withers			2.18	Elizabeth Hain			2.18
V. A. Jones			2.18	Ellie C. Glasgow			2.18
Mary L. Lamar			2.18				

No. 35.—Statement showing the number of persons employed in printing Fourth and Fifth Annual Reports of Bureau of Animal Industry during the fiscal year ended June 30, 1890, with the length of time each has been employed and the amount each has received.

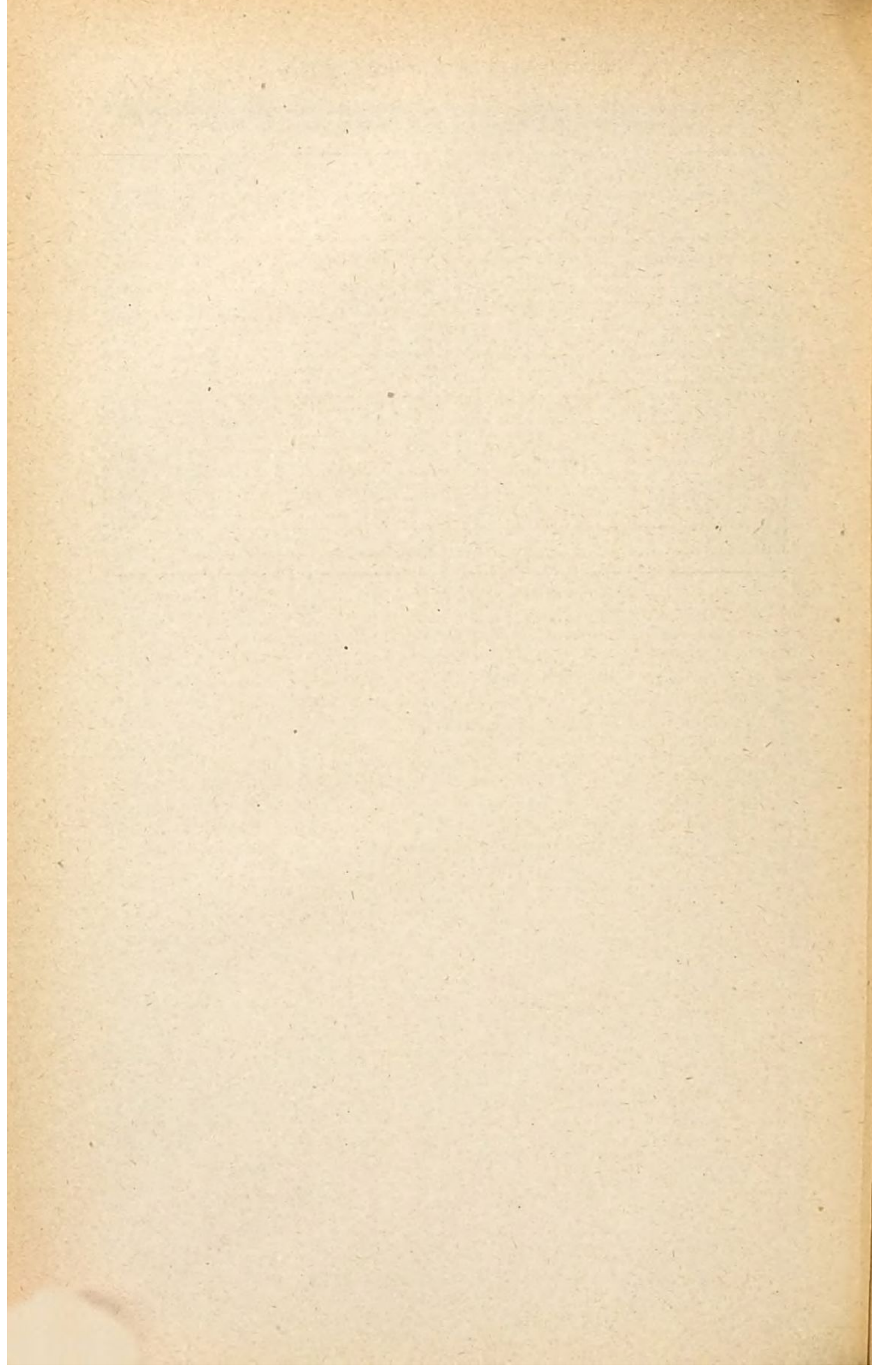
Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK.				TIME WORK—cont'd.			
F. C. Oberholtz		26 $\frac{7}{8}$	\$107.50	Frank Rowe	140		\$35.00
Andrew Taff	328		131.20	Charles E. Clark	96		24.00
Henry C. Watson	330		115.50	Jas. A. Lee	96		24.00
Augustus Schwartz	171		51.30	Grant Sexton	96		24.00
W. D. Foos	99		29.70	W. H. Bowman	96		24.00
Robt. L. Fearson	192		48.00	Elizabeth Mangan	141		32.43
Henry McEnroe	192		48.00	Ella V. Evans	229		52.67
Samuel Wilkinson	192		48.00	Minnie Osborne	227		52.21
John Cowgill	192		48.00	Mary F. Terry	225		51.75
Felix McGloin	192		48.00	Mary Morrow	222 $\frac{1}{2}$		51.17
R. E. Scott	328		82.00	Maggie McNamara	218 $\frac{1}{2}$		50.25
Wm. A. Boyd	192		48.00	Jennie Ferguson	209 $\frac{1}{2}$		48.18
E. W. Williams	191		47.75	M. L. Andrews	141		32.43
Thomas Shelton	188		47.00	George L. Ready	215		75.25
Belle Gates	188		47.00	A. A. Smith	28		11.20
Dora C. Reicks	187		46.75	George Douglas	211		52.75
H. Schreiner	187		46.75	R. B. Harford	212		84.80
Mary R. Biggins	186		46.50	John Stoll	198		79.20
S. K. Coster	162		48.60	Arthur Simmons, jr.	215		86.00
Wm. J. Rountree	152		38.00	F. C. Rudland	207		82.80
S. T. Satterfield	162		40.50	Robert H. Zimmerman	23		9.20
S. Hess	162		40.50	J. K. Hardesty	216		75.60
V. M. Evans	162		40.50	James Cavanaugh	216		67.50
J. J. Verser	148		51.80	George Lusky	215 $\frac{1}{2}$		53.87
E. P. Getchell	138		41.40	D. F. Anderson	205		102.50
W. H. Triplett	138		41.40	F. H. Chaffee	24		9.60
John F. Toole	73		18.25	R. M. Phipps	23 $\frac{1}{2}$		9.40
John W. Pomeroy	148		37.00	Patrick H. Markey	208		83.20
William C. Wilton	24		11.28	James A. Ryan	16		6.40
David Leonard	24		11.28	R. W. Moore	205		82.00
W. R. Westman	24		11.28	James D. Conner	205		82.00
T. W. Shomo	24		11.28	George H. Maurer	207		82.80
G. Abramson	24		11.28	George Finch	207		82.80
James Breen	24		11.28	William Gilliard	24		9.60
J. S. Smith	24		11.28	J. F. Glenn	208		83.20
Martin Mangold	24		11.28	H. C. Fish	208		83.20
W. S. Whitmore	24		11.28	John B. Smithers	24		9.60
Michael Shaen	24		11.28	Patrick Sweeney	204		81.60
John J. Fitzgerald	24		10.56	Ellen Donaldson	201		46.23
John C. O'Brien	24		10.56	Katie A. Murphy	206		47.28
Geo. H. Thayer	24		10.56	Annie Eckart	203		46.59
W. H. Parker	24		10.56	May Barnett	154 $\frac{1}{2}$		35.53
Byron Waters	24		10.56	Virginia King	197 $\frac{1}{2}$		45.42
M. T. Lincoln	120		60.00	Rachel Ellinger	193 $\frac{1}{2}$		44.50
William Fletcher	112		35.00	Hattie Z. Horn	204		46.92
R. A. Gray	88		24.64	Kate O'Gorman	205		47.14

No. 35.—Statement showing the number of persons employed in printing Fourth and Fifth Annual Reports of Bureau of Animal Industry, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
TIME WORK—cont'd.				PIECE WORK.			
J. W. Freeman.....	204½		\$51. 12	Georgie Carter			\$17. 85
A. L. Wood		25	143. 75	E. Young			31. 85
Florence Hoffman	198		61. 87	Ida S. Crapster			30. 05
E. S. Mallory	200		46. 00	Julia Skelly			31. 11
Kate O'Connor	197½		45. 44	Mary E. Wright			31. 11
W. Q. Lowd	184		73. 60	Elizabeth Hain			14. 30
Leonard Meyer	184		73. 60	Ellie C. Glasgow			31. 11
Edward Bailey	22		11. 66	Annie G. Laird			28. 96
C. A. Waterman	46		24. 38	M. A. Orme			25. 68
E. M. Wheat	39		20. 67	M. Reid			25. 68
J. A. Runyan	45		23. 85	Sadie Broderick			19. 09
D. B. Brown	25		10. 00	Sarah Dodge			5. 89
J. P. Herron	46		18. 40	Lida L. Smith			23. 13
W. McFarlane	17		8. 50	Laura A. Moore			18. 58
C. J. Alexander	58		29. 00	L. H. Johnson			18. 58
J. F. Cummins	96		38. 40	M. Ambrose			18. 58
J. B. Rice	234		93. 60	Mary E. Ellsworth			14. 54
George S. Kauffman	61		24. 40	Mary M. Sprandel			18. 58
Henry Webb	251		100. 40	M. Clarkson			18. 58
John Armstrong	211		84. 40	M. Corbin			18. 58
George H. Ellis	136		54. 40	P. C. Pape			18. 58
Casper C. H. Moxley	127		50. 80	A. G. Fuller			18. 58
A. R. Bell	180		72. 00	Emma L. Carrico			18. 58
D. M. Sandidge	153		61. 20	A. M. Ackerman			18. 58
Howard E. Sherman	165		66. 00	Bell Gheen			18. 58
Charles C. Russell	148		59. 20	A. Hutson			18. 58
E. H. Thomas	135		54. 00	E. Marsh			18. 58
E. J. Russell	34		18. 02	J. A. Burr			18. 58
Jos. A. Arnold	31		16. 43	Mary C. Ford			18. 58
C. M. Robinson	7		3. 71	Maggie Pemberton			18. 58
T. G. Williams	31		12. 40	K. R. Thomas			18. 58
M. R. Savage	24		9. 60	D. C. Brooke			18. 58
Phillip S. Steele	86½		10. 60	Annie Loring			18. 58
M. J. Scannell	88		35. 20	Jennie Thompson			18. 58
Ralph E. Dittoe	72		28. 80	Lizzie Downie			18. 58
C. D. Parsons	184		97. 52	A. S. Adams			18. 58
H. A. Gilbert	184		73. 60	Sarah E. J. Porter			18. 58
Thomas Conway	237		57. 50	Mary E. Wilson			18. 58
William Donath	135		33. 75	M. Markham			18. 58
Frank Dial	118		29. 50	M. G. Coder			18. 58
Edward C. Maher	128		51. 20	M. A. Ross			18. 58
R. A. Porter	128		51. 20	Alice V. Daly			16. 09
George F. McInturff	107		26. 75	Ellen Knapp			18. 58
Fred Hudson	152		38. 00	M. A. Sears			3. 85
James L. Feeny	156		62. 40	H. L. Stiles			16. 09
C. S. Mills	140		42. 00	Rose McClelland			16. 69
Max Craft	159		39. 75	J. A. Stein			16. 09
Charles P. Goodacre	158		39. 50	L. L. Andrews			25. 88
Charles I. O'Neill	24		6. 00	Bettie Baker			24. 61
William H. Bush	24		6. 00	Ella F. Clements			19. 50
J. W. Beall	184		73. 60	Winifred Cahill			20. 24
Andrew Melville	184		73. 60	Mary Lindsay			23. 56
A. C. Deans	183½		73. 40	Jennie Franklin			21. 08
James Clinton	184		73. 60	J. A. Downing			26. 05
Jno. C. Woodell	160		64. 00	Jennie E. Manning			13. 93
David A. Thompson	184		73. 60	Emma Woolsey			24. 27
N. A. Colbert	170		42. 50	B. F. Jeffries			19. 09
Hettie Russell	135½		31. 16	Jennie M. Murray			18. 35
C. M. Post	142		32. 66	Ella Ahern			18. 85
Clara E. Carter	144		33. 12	May Hoover			22. 91
Olivia J. Bond	144		33. 12	Annie O'Hara			23. 68
Ellen B. Quayle	139		31. 97	V. Henrick			22. 45
E. Finlen	141½		32. 54	Lena M. O'Leary			18. 49
Eliza J. McElfresh	126		31. 28	Paula De Vantier			18. 18
M. J. Stanley	144		33. 12	Miriam Meals			22. 61
Annie J. Tagart	143		32. 89	Mary McCormick			21. 19
S. M. Cornell	32		7. 36	Katie O'Mealy			27. 14
A. D. Coleman	139		48. 65	D. C. Toole			25. 19
Peter Swift	136		54. 40	Minnie F. McGowan			24. 53
John Shea	83½		33. 40	Clara A. Erck			5. 43
Wm. E. Lee	129		51. 60	Maud McPherson			4. 80
Jos. T. Gillin	110½		44. 20	Mary C. Curtis			4. 80
James O. Amoss	135½		54. 20	Lora E. Collar			1. 60
J. Wilson Clark	134½		53. 80	M. A. Burgess			30. 38
F. A. West	8		2. 80	D. M. Pratt			30. 38

No. 35.—Statement showing the number of persons employed in printing Fourth and Fifth Annual Reports of Bureau of Animal Industry, etc.—Continued.

Name.	Time employed.		Amount received.	Name.	Time employed.		Amount received.
	Hours.	Days.			Hours.	Days.	
PIECE WORK—cont'd.				PIECE WORK—cont'd.			
Laura V. Etter.....			\$30.38	Mary E. Buete.....			\$22.95
Jennie Fowler.....			30.38	Adelaide Brooks.....			22.86
J. Sibley.....			30.38	Mary Nolan.....			20.87
Mary Hubbell.....			30.38	Rosa B. Ridgeley.....			18.56
Ella House.....			29.56	Maggie A. Duffy.....			19.06
Mary Kraft.....			29.17	Josephine Elliott.....			21.01
D. Lord.....			34.50	J. Wilson.....			21.00
A. Columbus.....			36.30	M. M. Morrow.....			17.97
M. E. Hoover.....			36.30	M. A. Ryan.....			20.23
W. A. Rowzee.....			35.37	J. Breslin.....			20.23
Lillie E. Bull.....			36.14	J. B. Forbes.....			21.00
Sabina Jordan.....			36.00	Ida Dodge.....			21.00
M. J. Griswold.....			35.64	Kate V. Smoot.....			18.96
M. G. Lillie.....			33.96	F. Chase.....			18.09
J. F. Rose.....			33.80	Bell J. McIntyre.....			28.12
H. M. Eskew.....			33.77	Lizzie Doyle.....			14.17
Gertrude V. Withers.....			33.96	Belle Carter.....			14.18
Mary L. Lamar.....			31.85	E. M. Nash.....			12.45
E. H. Stanton.....			31.07	Annie Higgins.....			10.70
Ella Goodsir.....			31.85	E. A. Folck.....			9.70
J. Hitchcox.....			22.86	Mollie E. King.....			9.70



IN THE SENATE OF THE UNITED STATES.

DECEMBER 19, 1890.—Referred to the Committee on Indian Affairs and ordered to be printed.

Mr. MANDERSON submitted the following

R E S O L U T I O N :

Resolved, That the Committee on Indian Affairs, or any subcommittee thereof appointed by its chairman, is hereby instructed to inquire into the condition of the Indian tribes in the States of North Dakota, South Dakota, Montana, and elsewhere; the cause leading to the occupation of Indian Reservations by United States troops; whether the treaties with said Indians have been fulfilled; to investigate fully the facts concerning the arms and munitions of war in the possession of said Indians, and what steps, legislative and executive, are needed to disarm them and prevent supply of such armament hereafter; also to inquire whether the care and control of Indians living in the tribal relation should be transferred to any other department of the Government, and to report to the Senate by bill or otherwise. Said committee shall have power to send for persons and papers, examine witnesses under oath, employ a stenographer and interpreter, and sit during the session or the recess of the Senate at such times and places as the committee may determine; and the actual and necessary expenses of said investigation to be paid out of the contingent expenses of the Senate upon vouchers approved by the chairman of the committee.

IN THE SENATE OF THE UNITED STATES.

DECEMBER 19, 1890.—Ordered to lie on the table and be printed.

Mr. GRAY submitted the following

RESOLUTION:

Whereas it is impracticable to guard an extended frontier of nearly 4,000 miles between two different jurisdictions and prevent the evasion of high tariff duties; and

Whereas especial consideration is demanded by territorial contiguity, community of language and occupation, similarity of political and social institutions, and the existence of natural markets, rendering it desirable and in every view expedient that a system of reciprocal and free commercial exchanges between the people of the United States and those of the Dominion of Canada, should be adopted; and

Whereas on our southern border our sister Republic of Mexico has long awaited the coöperative legislation of this Government to institute a reciprocal system for the exchange of products of the industries of that country for those of the United States: Therefore be it

Resolved, That for the expansion of the markets for the productions of American skill and industry, the promotion of friendly and neighborly intercourse with those countries whose territorial limits stretch along our northern and southern boundaries, it is hereby recommended to the President of the United States to institute negotiations with the countries of Great Britain and Mexico, whereby in the interests of commercial intercourse and for the strengthening the ties of amity and good neighborhood, the reduction and total repeal of impost duties upon the leading articles of production of the peoples of the respective countries herein named may be effected by their independent and coöperative legislation.

IN THE SENATE OF THE UNITED STATES.

DECEMBER 20, 1890.—Ordered to be printed.

Mr. MORGAN submitted the following

RESOLUTION:

Whereas, in the substitute reported to the Senate for House bill No. 11045, on the 7th of August, 1890, in section 31 of said substitute, it is provided that—

“Sections six hundred and forty-three, six hundred and forty-five, two thousand and seventeen to two thousand and twenty-four, both inclusive, and sections nineteen hundred and eighty-two to nineteen hundred and eighty-seven, both inclusive, and sections two thousand and twenty-seven, and five thousand five hundred and eleven to five thousand five hundred and seventeen, both inclusive, and sections five thousand five hundred and twenty-one to five thousand five hundred and twenty-three, both inclusive, of the Revised Statutes of the United States are each and every of them hereby made a part of this act, and their provisions are made to refer and apply to this act with like force and effect as if this act was specifically mentioned or referred to therein, save as such sections are in terms changed or modified by the provisions of this act.”

And without the incorporation of such changes and modifications of said sections of the existing law into the substitute so reported, it is uncertain what changes are intended to be made therein: Therefore

Resolved by the Senate, That the Committee on Privileges and Elections are hereby directed so to amend section 31 of the proposed amendment as to show what are the changes and modifications in said sections of the existing law, which were intended to be made by the bill so reported by said committee; and to avoid the necessity of again committing said bill and proposed amendment to said committee, that they are instructed to make a supplemental report without delay, showing said changes and modifications in such existing statutes which they recommend and provide for in the amendment reported to the Senate.

IN THE SENATE OF THE UNITED STATES.

DECEMBER 20, 1890.—Ordered to be printed.

Mr. McMILLAN, from the Committee of Conference on the disagreeing votes of the two Houses on the amendments of the Senate to the bill (H. R. 8243), submitted the following

REPORT:

The Committee of Conference on the disagreeing votes of the two Houses on the amendments of the Senate to the bill (H. R. 8243) supplementary to an act entitled "An act to authorize the construction of the Baltimore and Potomac Railroad in the District of Columbia," having met, after full and free conference have agreed to recommend, and do recommend, to their respective Houses as follows:

That the Senate recede from its amendment and agree to the House bill, amended to read as follows:

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the construction, maintenance, and use for railway purposes of the turn-outs and sidings of the Baltimore and Potomac Railroad Company, now extending from its line between the Anacostia or Eastern Branch of the Potomac River and the Long Bridge, in the city of Washington, into the several squares of ground known and designated on the plat of the city of Washington as follows: Square seven hundred and thirty-seven; square seven hundred and thirty-nine; square six hundred and ninety-five; square northwest of square six hundred and ninety-five; square west of square six hundred and ninety-five; square north of square six hundred and ninety-seven; square east of square six hundred and forty-two; square north of square six hundred and forty-two; square six hundred and forty-one; square five hundred and thirty-six; square four hundred and ninety-three; square south of square four hundred and sixty-three; square four hundred and sixty-four; square three hundred and eighty-six; square two hundred and sixty-seven, and square south of square two hundred and sixty-seven, is hereby authorized, but Congress may at any time revoke said authority, said tracks to be maintained in such manner as will least obstruct the public streets, avenues, or alleys on which said tracks are laid, and to be under the general supervision of the Commissioners of the District of Columbia.

"SEC. 2. That it shall be the duty of the Commissioners of the District of Columbia, and they are hereby authorized and empowered, whenever they consider it a public benefit, to grant the Baltimore and Potomac Railroad Company permission to lay, maintain, and use side-tracks and sidings from the main line or lines of said railroad into any real estate in the said city abutting on the streets or avenues on which such line of such company is or may be situated, east of Four-and-a-half street and south of Virginia and Maryland avenues, which may be used or

occupied for manufacturing, commercial, or other business purposes by parties desiring the use of such facilities. Such side-tracks or sidings shall be laid and maintained under the direction of said Commissioners, and in such manner as shall least obstruct the use of the public streets for ordinary purposes: *Provided*, That the right to revoke the use of said side-tracks or sidings is reserved to Congress.

“SEC. 3. That the Baltimore and Potomac Railroad Company is hereby authorized and empowered to acquire, subject to the approval of said Commissioners, for the purposes of its business, any one or more of the squares of ground in the city of Washington south of the line of the said railroad and north of L street and east of Delaware avenue and north of the Eastern Branch and east of Thirteenth street southeast, and any one or more squares, as shall be approved by the said Commissioners, abutting on the line of said railroad on Maryland and Virginia avenues, east of Four-and-a-half street and south of its main track on Virginia avenue, and west of Twelfth street southwest, and to extend, maintain, and use tracks from convenient points on the line of said railroad into the said property, and to cross such streets as may be necessary for that purpose, and to construct thereon such facilities as may be necessary for its business as a common carrier, and approved by said Commissioners, and to maintain such facilities in connection therewith; such tracks, where they cross streets, to be laid and maintained under the direction of the Commissioners of the District of Columbia, and in such manner as shall least obstruct the use of said streets for ordinary purposes. The right to remove such tracks is hereby reserved to Congress. And in case said company shall be unable for any reason to acquire such properties or any portion thereof by purchase they may be acquired by said company in the manner provided by sections numbered from six hundred and forty-eight to six hundred and sixty-three, both inclusive, of the Revised Statutes, relating to the District of Columbia; but nothing herein contained shall authorize the condemnation of any church or school property or property of the United States: *Provided*, That nothing contained in this act, and no expenditure that may be made by said railroad company hereunder, shall be held or construed to give said company any right, legal or equitable, not now possessed to retain the passenger station of said company on Sixth street.

“SEC. 4. That Congress hereby reserves the right to alter, amend, or repeal this act.”

And the House agree to the same.

LOUIS E. ATKINSON,
JNO. T. HEARD,
Managers on the part of the House.
JAMES McMILLAN,
C. B. FARWELL,
ISHAM G. HARRIS,
Managers on the part of the Senate.

IN THE SENATE OF THE UNITED STATES.

DECEMBER 22, 1890.—Presented, referred to the Committee on Appropriations, and ordered to be printed.

COMMUNICATION FROM THE AUDITOR OF THE TREASURY
RECOMMENDING PASSAGE OF A BILL TO ALLOW COMPENSA-
TION FOR EXTRA SERVICES RENDERED BY EMPLOYÉS OF
THAT OFFICE FROM JULY 1, 1887, TO SEPTEMBER 30, 1888.

OFFICE OF THE AUDITOR OF THE TREASURY
FOR THE POST OFFICE DEPARTMENT,
Washington, D. C., December 18, 1890.

SIR: At the request of employés of this Bureau, who are interested in a claim for compensation for extra services rendered from July 1, 1887, to September 30, 1888, as set forth in Ex. Doc. No. 137, House of Representatives, Fiftieth Congress, second session, I take pleasure in recommending that said bill may be taken up and receive favorable consideration by Congress at this session.

While said services were rendered during the administration of my predecessor, I have learned that the services were actually performed and rendered necessary by a great increase of work without any increase of clerical force, as stated in a letter by my predecessor dated February 11, 1889.

I would also respectfully refer to the precedents for this action by Congress in the act of Congress granting compensation to clerks and other employés of the Adjutant-General's Office and of the Surgeon-General's Office, War Department, for extra hours of duty required of them in 1887, approved October 19, 1888, and the act of Congress granting compensation to employés of the Post-Office Department for extra hours of labor from April 11, 1885, approved September 28, 1890.

Inclosed herewith is a statement in tabular form of the amounts due each employé, and also copies of letters of my predecessor and Ex-Secretary Fairchild, recommending this legislation.

Very respectfully,

T. B. COULTER,
Auditor.

Hon. LEVI P. MORTON,
President of the United States Senate, Washington, D. C.

TREASURY DEPARTMENT, *February 13, 1889.*

SIR: I have the honor to transmit to the House of Representatives a communication from the Sixth Auditor, of the 11th instant, and a petition of the employés in his office, praying that an appropriation be made by Congress to pay them compensation

COMPENSATION FOR EXTRA SERVICES.

for extra service rendered under the direction of the Auditor from July 1, 1887, to September 30, 1888, inclusive.

Respectfully, yours,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE AUDITOR OF THE TREASURY,
FOR THE POST-OFFICE DEPARTMENT,
Washington, D. C., February 11, 1889.

SIR: I have the honor to forward to you the inclosed petition of the employés in this Bureau for compensation for extra work performed from July 1, 1887, to September 30, 1888, inclusive. I also forward the time report, showing the number of extra hours worked by each employé.

In the time report I have omitted the names of all employés whose absence with pay exceeded the usual thirty days added to extra hours worked by them, as I consider in these cases they have already received the extra compensation.

The great increase of the current work in this Bureau, without any increase of clerical force for the three years last past, made it absolutely necessary for the extra labor of the employés, and when I requested it should be done it was performed by the great majority of the employés willingly and cheerfully, as they fully appreciated the situation.

I respectfully commend their petition, and trust you will forward it to Congress with your approval.

Respectfully,

D. McCONVILLE,
Auditor.

Hon. C. S. FAIRCHILD,
Secretary of the Treasury, Washington, D. C.

List of employés who worked over hours, with the number of hours worked, in the office of the Sixth Auditor from July 1, 1887, to September 30, 1888.

[Rate per hour, 60 cents.]

Name.	Number of hours.	Amount.	Name.	Number of hours.	Amount.
Adams, M. A.....	200	\$120.00	Clark, H. H.....	10	\$6.00
Adkins, M. T.....	30	18.00	Clark, J. H.....	23	13.80
Alden, W. A.....	135	81.00	Clements, A.....	60	36.00
Allen, B. A.....	23	13.80	Cleveland, C. E.....	25	15.00
Allen, R. I. F.....	33	19.80	Cobell, L. W.....	35	21.00
Apple, E. J.....	75	45.00	Cochran, W. E.....	48	28.80
Archer, W.....	52	31.20	Coe, A.....	48	28.80
Arnold, H.....	127	76.20	Cole, W. F.....	42	25.20
Ashby, B. S.....	35	21.00	Conklin, A. H.....	20	12.00
Austin, J. B.....	205	123.00	Cooper, G. H.....	23	13.80
Bagby, R. P.....	30	18.00	Copperthwait, H.....	122	73.20
Baldwin, V. C.....	10	6.00	Cordero, F. E.....	48	28.80
Bales, H. A.....	58	34.80	Couch, H. E.....	89	53.40
Barrows, S. M.....	152	91.20	Crawley, C.....	10	6.00
Bateman, C. P.....	32	19.20	Crisp, T. B.....	38	22.80
Bellows, Josiah.....	34	20.40	Croft, C. M.....	9	5.40
Benedict, C. C.....	41	24.60	Crooks, R. C.....	52	31.20
Benton, A. J.....	97	58.20	Cullen, J. P.....	60	36.00
Betts, A. P.....	14	8.40	Cunningham, P.....	326	195.60
Betts, W. P.....	35	21.00	Darling, G. A.....	223	133.80
Bibb, H. J.....	23	13.80	Del Monte, L.....	7	4.20
Blackburn, W. D.....	32	19.20	Denmark, G. K.....	23	13.80
Bleakmore, F. F.....	96	57.60	Dixon, J. H.....	23	13.80
Bostick, M. M.....	5	3.00	Doane, M. L.....	55	33.00
Brannigan, F.....	113	67.80	Doherty, M.....	9	5.40
Brown, T. J.....	36	21.60	Dougherty, W. E. D.....	23	13.80
Brunemer, J. H.....	29	17.40	Draper, N. E.....	80	48.00
Burfield, H. M.....	170	102.00	Duane, Louis.....	9	5.40
Burke, C.....	10	6.00	Durham, G. B.....	11	6.60
Burnett, W. W.....	132	79.20	Duvall, E. S.....	8	4.80
Chambers, B.....	375	225.00	Eckles, W. C.....	176	105.60
Chapline, C. T.....	23	13.80	Ege, E. E.....	9	5.40
Chapman, A.....	55	33.00	Emery, H. A.....	8	4.80

COMPENSATION FOR EXTRA SERVICES.

3

List of employes who worked over hours, with the number of hours worked, etc.—Continued.

[Rate per hour, 60 cents.]

Name.	Number of hours.	Amount.	Name.	Number of hours.	Amount.
Engle, J. M.	22	\$13.20	Marks, M.	50	\$30.00
English, Sam.	39	23.40	Martin, John E.	50	30.00
Fallon, M. A.	10	6.00	Mason, G.	23	13.80
Farrow, T. Stobo.	186	111.60	Megie, F. N.	37	22.20
Ferguson, J. C.	56	33.60	Mitchell, C. T.	10	6.00
Fillmore, M. E.	30	18.00	Moffatt, J. S.	151	90.60
Fisher, G. M.	206	123.60	Moody, V.	10	6.00
Fitzhugh, E. C.	10	6.00	Moore, B. F.	150	90.00
Fletcher, L.	48	28.80	McAdam, I.	110	66.00
Foose, S. A.	88	52.80	McCarthy, J. J.	126	75.60
Frank, J. A.	31	18.60	McGeagh, E. J.	8	4.80
Fryer, J. H.	23	13.50	McKenna, K.	9	5.40
Gallaher, A. A.	9	5.40	McKennie, A. R.	10	6.00
Gassaway, H. N.	67	40.20	McNiell, W. H.	23	13.80
Gibbs, G. L.	23	13.80	McRea, M.	9	5.40
Gibson, L. M.	83	49.80	Moore, H. W.	23	13.80
Gibson, M. S.	23	13.80	Moore, J. P.	32	19.20
Gifford, E. J.	9	5.40	Moore, J. P.	56	33.60
Given, C. A.	22	13.20	Moore, M. V.	7	4.20
Goddard, F. P.	28	16.80	Mozart, A. M.	27	16.20
Goodwin, E. A.	18	10.80	Mueller, F. J.	70	42.00
Grady, Annie	30	13.00	Nailor, L. W.	45	27.00
Graffin, H. E.	49	29.40	Nettleton, H. O.	51	30.60
Greene, T. H.	39	23.40	Nevett, H. I.	37	22.20
Gresham, P. H.	30	18.00	Nichols, I. N.	143	85.80
Griggs, E. P.	40	24.00	Niver, E. B.	17	10.20
Guinion, Z.	132	79.20	Nixon, A. H.	125	75.00
Gusdorf, M.	23	13.80	Noerr, W. B.	23	13.80
Hall, G. W.	6	3.60	O'Brien, M. C.	4	2.40
Hamilton, H. T.	10	6.00	O'Brien, William	35	21.00
Hamner, G. W.	39	23.40	O'Neal, John	29	17.40
Harrison, E. B.	30	18.00	Oram, J. A.	60	36.00
Hart, O. J., jr.	23	13.80	Palmer, E. J.	9	5.40
Harvey, H. M.	29	17.40	Park, C. M.	23	13.80
Hayes, S. A.	105	63.00	Parsons, J. C.	97	58.20
Hayes, S. H.	202	121.20	Peetry, I. G.	105	63.00
Hazen, M. C.	108	64.80	Pendleton, Miss E.	9	5.40
Heap, E.	18	10.80	Pendleton, E. B.	10	6.00
Henaley, Charles.	39	23.40	Perkins, E.	36	21.60
Hibbs, E. J. C.	110	66.00	Pitcher, D. L.	23	13.80
Hicks, L.	10	6.00	Poole, James.	39	23.40
Hill, A.	9	5.40	Post, T. S.	42	25.20
Hillyard, R. B.	31	18.60	Prescott, Benjamin.	6	3.60
Holman, B. W.	39	23.40	Proctor, W. H.	60	36.00
Hooper, M. H.	101	60.60	Quackenbush, A. C.	125	75.00
Horgan, J. J.	193	115.80	Ramsdell, E. R.	59	35.40
Horton, J. J.	133	79.80	Reed, A. L.	10	6.00
Hotaling, W. J.	57	34.20	Richardson, G. H.	23	13.80
Howard, H. P.	214	128.40	Ridgate, F. H.	72	43.20
Howell, A. S.	132	79.20	Robinson, A. N.	23	13.80
Hunt, L. F.	34	20.40	Robinson, S. A.	9	5.40
Hymen, Frank	34	20.40	Romaine, W. H.	36	21.60
Jackson, E. D.	23	13.80	Rorison, E.	36	21.60
Johnson, E. A.	10	6.00	Rutherford, W. A.	23	13.80
Johnson, F. T.	26	15.60	Rynex, A. T.	8	4.80
Johnston, A. W.	23	13.80	Scott, A. L.	14	8.40
Karpeles, L.	10	6.00	Shelley, W.	32	19.20
Kavanaugh, K.	110	66.00	Shepard, H. M.	9	5.40
Keeler, S. R.	30	18.00	Shunk, W.	30	18.00
Keleber, P. J.	234	140.40	Smalley, E. K.	9	5.40
King, M. C.	143	85.80	Smiley, D.	52	31.20
King, W. M.	215	129.00	Smith, E. E.	43	25.80
Kingsbury, J. H.	152	91.20	Smith, H. C.	26	15.60
Kirkwood, R. E.	9	5.40	Smith, J. F.	23	13.80
Kitchin, W.	34	20.40	Smith, W. B.	39	23.40
Lake, J. L.	132	79.20	Snowden, M. J.	122	73.20
Lamb, T. L.	102	61.20	Somerville, S. A.	28	16.80
Lane, J. H.	23	13.80	Spates, E.	10	6.00
Lathrop, D. W.	163	97.80	Speich, E.	23	13.80
Laub, W. B.	72	43.20	Spencer, G. F.	23	13.80
Lazenby, R.	9	5.40	Spencer, George F.	39	23.40
Leigh, E. V.	27	16.20	Spooner, C. M. C.	30	18.00
Lipscomb, L. M.	23	13.80	Sprague, M. R.	8	4.80
Lord, C. A.	17	10.20	Squire, L. T.	60	36.00
Luff, O.	46	27.60	Stamp, A. H.	215	129.00
Macumber, A. L.	9	5.40	Stanford, W. J.	10	6.00
Magee, J. H.	153	91.80	Stansell, W. K.	30	18.00
Mahon, L. V.	10	6.00	Stevenson, F.	375	225.00
Mains, L.	13	7.80	Stevenson, R.	213	127.80
Manning, J. P.	42	25.20	Stilley, S. C.	49	29.40
Marcy, W. L.	31	18.60	Stine, A. B.	63	37.80

COMPENSATION FOR EXTRA SERVICES.

List of employes who worked over hours, with the number of hours worked, etc.—Continued.

[Rate per hour, 60 cents.]

Name.	Number of hours.	Amount.	Name.	Number of hours.	Amount.
Stoddard, J. A.....	85	\$51.00	Wagganer, N. M.....	50	\$30.00
Stone, J.....	23	13.80	Warfield, L. G.....	125	75.00
Story, A. R.....	11	6.60	Waring, W.....	39	23.40
Story, A. R.....	10	6.00	Warrington, H.....	132	79.20
Story, J. J.....	23	13.80	Watkins, E. L.....	30	18.00
Stoutenburgh, A. S.....	203	121.80	Wayne, W. A.....	63	37.80
Sumner, J. H.....	73	43.80	Weaver, J. C.....	69	41.40
Swaine, A. M.....	10	6.00	Welch, F. I.....	39	23.40
Sweeney, T. H.....	210	126.00	White, J. R.....	65	39.00
Swift, E. R.....	30	18.00	White, L. K.....	10	6.00
Taylor, J.....	207	124.20	Wilcox, M. E.....	15	9.00
Thompson, M. S.....	40	24.00	Wilkes, T. M.....	29	17.40
Tisdell, H. C.....	31	18.60	Willard, S. W.....	10	6.00
Trader, H. G.....	49	29.40	Williams, Chas.....	34	20.40
Treanor, J.....	60	36.00	Williams, Charles.....	52	31.20
Trumbull, E. C.....	52	31.20	Williams, G. D.....	31	18.60
Tucker, G. H.....	27	16.20	Williams, I. F.....	9	5.40
Tullock, E. C.....	10	6.00	Wilson, C. A.....	10	6.00
Turner, E. M.....	9	5.40	Wistar, G. H.....	143	85.80
Tyson, H. C.....	50	30.00	Woodson, W. H.....	119	71.40
Van Buskirk, H. K.....	154	92.40	Wright, H. R.....	9	5.40
Wade, F. M.....	139	83.40	Young, W. H.....	22	13.20
Walton, W. H.....	154	92.40			

MESSENGERS.

[30 cents per hour.]

Cummins, C.....	52	\$15.60	Lyons, H. W.....	150	\$45.00
Edwards, J. E.....	775	232.50	Meredith, G. W.....	385	115.50
Ewings, J. W.....	16	4.80	White, Richard.....	39	11.70
Faulkner, P.....	405	121.50	Wilson, A.....	106	31.80
Gardiner, N.....	12	3.60			

RECAPITULATION.

Number of hours worked by chiefs of divisions and clerks, 16,023, at 60 cents per hour.....	\$9,613.80
Number of hours worked by messengers, 1,940, at 30 cents per hour.....	582.00
Total	10,195.80

IN THE SENATE OF THE UNITED STATES.

DECEMBER 23, 1890.—Ordered to be printed.

Mr. ALDRICH submitted the following

RESOLUTION:

Resolved, That for the remainder of this session the rules of the Senate be amended by adding thereto the following:

When any bill, resolution or other question shall have been under consideration for a reasonable time it shall be in order for any Senator to demand that debate thereon be closed. On such demand no debate shall be in order, and pending such demand no other motion except one motion to adjourn shall be made. If such demand be seconded by a majority of the Senators present, the question shall forthwith be taken thereon without debate. If the Senate shall decide to close debate on any bill, resolution, or other question, the measure shall take precedence of all other business whatever, and the question shall be put upon the amendments, if any then pending, and upon the measure in its successive stages according to the rules of the Senate, but without further debate, except that every Senator who may desire shall be permitted to speak upon the measure, including all amendments, not more than once, and not exceeding thirty minutes.

After the Senate shall have decided to close debate as herein provided, no motion shall be in order but a motion to adjourn or to take a recess, when such motions shall be seconded by a majority of the Senate. When either of said motions shall have been lost or shall have failed of a second, it shall not be in order to renew the same until one Senator shall have spoken upon the pending measure, or one vote upon the same shall have intervened.

Pending proceedings under the foregoing rule no proceeding in respect of a quorum shall be in order until it shall have appeared on a division or on the taking of the yeas and nays that a quorum is not present and voting.

Pending proceedings under the foregoing rule all questions of order, whether upon appeal or otherwise, shall be decided without debate, and no obstructive or dilatory motion or proceedings of any kind shall be in order.

For the foregoing stated purposes the following rules, namely: VII, VIII, IX, X, XII, XIX, XXII, XXVII, XXVIII, XXXV, and XL are modified.

IN THE SENATE OF THE UNITED STATES.

DECEMBER 30, 1890.—Ordered to be printed.

AMENDMENT

Intended to be proposed by Mr. Reagan to the resolution of Mr. Aldrich (Mis. Doc. No. 33) proposing certain amendments to the rules of the Senate, viz: Amend the resolution to close debate by striking out the sentence beginning on line 21 and ending on line 24, and inserting the following in lieu thereof:

After the Senate shall have decided to close debate as herein provided no motion shall be in order except a motion to amend the pending bill, and five minutes debate may be allowed for and five minutes against such amendment, or a motion to adjourn or to take a recess.

And by striking out of line 25 the words, "or shall have failed of a second."

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IN THE SENATE OF THE UNITED STATES.

DECEMBER 30, 1890.—Ordered to be printed.

AMENDMENT

Intended to be proposed by Mr. Reagan to the resolution of Mr. Aldrich (Mis. Doc. No. 33) proposing certain amendments to the rules of the Senate, viz:

Amend the resolution to close debate by striking out all of the paragraph beginning with line 29 and ending with line 32.

○

IN THE SENATE OF THE UNITED STATES.

DECEMBER 24, 1890.—Ordered to lie on the table and be printed.

Mr. MITCHELL submitted the following

RESOLUTION:

Resolved, That the Committee on the Judiciary be, and it is hereby, instructed to inquire as to the date when under existing legislation the acts now in force relating to the restriction of Chinese immigration into this country expire—whether in 1892 or 1894; and also as to whether the Chinese exclusion act of 1888, commonly known as the “Scott act,” will have any force or effect, and if so, in what respect and to what extent, after the restriction acts referred to shall have expired by the provisions of their own limitation.

○

IN THE SENATE OF THE UNITED STATES.

DECEMBER 29, 1890.—Ordered to be printed.

Mr. FAULKNER submitted the following

RESOLUTION:

Resolved, That the Superintendent of the Census be instructed to furnish the Senate information of the population of each county of the State of West Virginia, as shown by the returns filed in his office, and upon which he has officially declared the aggregate population of said State by Census Bulletin No. 16.

○

IN THE SENATE OF THE UNITED STATES.

DECEMBER 29, 1890.—Presented, referred to the Committee on Public Lands, and ordered to be printed.

RESOLUTION OF THE LEGISLATIVE ASSEMBLY OF THE TERRITORY OF OKLAHOMA RECOMMENDING THE PASSAGE OF AN ACT AUTHORIZING THE LEASING OF PUBLIC LANDS HELD FOR THE BENEFIT OF PUBLIC SCHOOLS.

TERRITORY OF OKLAHOMA,
EXECUTIVE OFFICE,
Guthrie, December 24, 1890.

To the President of the Senate of the United States:

I have the honor to inform you that the following is a true copy of a resolution unanimously adopted by the legislative assembly of the Territory of Oklahoma this day.

It is sincerely hoped favorable action may be taken thereon by your honorable body.

Very respectfully,

GEO. W. STEELE.

HOUSE CONCURRENT RESOLUTION NO. 25.

Whereas the sixteenth and thirty-sixth sections of the public lands of the Territory of Oklahoma are reserved by the United States from settlement and intended to be held for the benefit of the public schools; and

Whereas said lands are now being entered upon and occupied in clear violation of law; and

Whereas the people of said Territory are very much in need of funds for the purpose of establishing and maintaining a system of public schools; and

Whereas quite a considerable sum of money might be raised annually for that purpose from rents of said school lands: Therefore be it

Resolved by the legislative assembly of the Territory of Oklahoma, That Congress be memorialized to pass an act authorizing the leasing of said school land, and that an enrolled copy of this resolution, signed by the speaker of the house, the president of the council, and the governor, be by the governor forwarded each to the President of the United States Senate, the Speaker of the House of Representatives, and to the Hon. D. A. Harvey, our Delegate to Congress.

C. G. JONES,
Speaker pro tem. of the House of Representatives.
G. W. GARDESSHIRE,
President of the Council.

Approved December 24, 1890.

GEO. W. STEELE,
Governor.

IN THE SENATE OF THE UNITED STATES.

DECEMBER 29, 1890.—Ordered to be laid on the table and printed.

Mr. MITCHELL presented the following

MEMORIAL OF THE CHAMBER OF COMMERCE OF PORTLAND,
OREGON, REFERRING TO THE TORREY BANKRUPT BILL AS A
JUST AND WISE MEASURE AND DEMANDING ITS EARLY EN-
ACTMENT.

CHAMBER OF COMMERCE OF PORTLAND, OREGON.

T. F. OSBORN, President.

SAMUEL HEITSHU, First vice-president.

D. D. OLIPHANT, Secretary.

WILLIAM KAPUS, Second vice-president.

W. S. LADD, Treasurer.

PORTLAND, OREGON, *December 17, 1890.*

To the Congress of the United States:

Your memorialist, the Portland, Oregon, Chamber of Commerce, respectfully represents that Congress ought to exercise, without delay, the power conferred solely upon it by the Federal Constitution to enact uniform laws upon the subject of bankruptcy, for reasons as follows:

(1) The attempted enactment and enforcement by the several States of bankruptcy laws have necessarily been unsuccessful, because the power to do so was reserved to Congress. Even if it were possible for the several States to provide by legislation for the administration of the estates of dishonest and insolvent debtors and the discharge of honest bankrupts, it would be impracticable for them to act with such uniformity as would be necessary to best serve the interests of commerce. It is therefore necessary to have Congress enact a uniform bankrupt law because of the reservation in the Constitution, as well as the impracticability of State legislation upon the subject.

(2) The fact that the several States have attempted to legislate for the protection of the commercial credit of their citizens, and the adjustment of the differences which arise in the course of commercial transactions, constitutes an earnest and vehement protest against the failure of Congress to place upon the national statute books a permanent bankrupt law:

(3) The citizens of the States who reside at long distances from the centers of trade are particularly interested in the enactment of a law which shall be a guaranty to the persons from whom they purchase their supplies that at least a part of the purchase price will be paid. The existence of such a law would in effect increase the capital invested in business by them as it would extend their credit and make it possible for them to buy larger quantities of goods, and enable them to purchase their goods at a lower price, and, as a consequence, they would be able to sell them at a corresponding lower price to the consumer.

(4) In the Western and newly-settled States there is greater hazard in doing business than in the older States, and in the event of failure under circumstances which render a continuation of business impossible

there is less opportunity for obtaining employment in a subordinate capacity than in the older communities, where the occupations are more diversified, and, as a consequence, it is of the utmost importance that men who have honestly failed in their enterprise should be discharged and given an opportunity to start afresh in their multifarious enterprises for the development of the wonderful resources of the country.

(5) The multifarious transactions which constitute commerce are voluntarily entered into. It is not possible to compel an individual, firm, or corporation to become either a debtor or a creditor. The transactions entered into upon credit beget a debtor and a creditor. The obligation of the one and the claim of the other are identical in amount, and as a result, the aggregate amount owed by the debtors is exactly balanced by the aggregate amount due the creditors. The two classes are of equal importance and neither should be favored in a legislative way, but both classes should have reciprocal rights and responsibilities. It would therefore be manifestly wrong and hurtful of the best interests of both classes for a law to be passed providing for a voluntary to the exclusion of an involuntary system or the reverse.

In view of all which, be it

(1) *Resolved*, That the reservation to Congress by the Constitution of the United States of the right to pass a bankrupt law imposes an obligation to do so.

(2) *Resolved further*, That the attention of Congress is called to the fact that the several States have attempted to protect the rights of their citizens by the enactment of insolvency laws, and that these attempts constitute a demand for the enactment, without delay, of a uniform, equitable law.

(3) *Resolved further*, That the best interests of the citizens of all parts of the country, and particularly in the States most distant from the great commercial centers, will be benefited by the passage of a law designed to prevent the perpetration of fraud, punish wrong doers, extend commercial credit between the members of the commercial world, promote and foster commerce, and discharge honest insolvents from the burden of their indebtedness over the amounts paid in dividends by their estates.

(4) *Resolved further*, That the energetic, enterprising citizens of the United States who have performed the pioneer work of developing the great industries and resources of the new States ought to have, in the event of honest misfortune, the benefits of the relief provided by an equitable bankrupt law.

(5) *Resolved further*, That we protest against the enactment of a voluntary to the exclusion of an involuntary bankrupt law, and *vice versa*, and earnestly petition for one which shall be comprehensive of the whole subject by providing for both voluntary and involuntary bankruptcy.

(6) *Resolved further*, That the Torrey bankrupt bill, as passed by the House of Representatives, and now pending in the Senate, is a just and wise measure and the embodiment of the legislation authorized by the Constitution of the United States on the part of Congress, and its enactment is therefore earnestly demanded.

(7) *Resolved further*, That copies of this memorial be sent to the Senators and Representatives from Oregon.

[SEAL.] THE CHAMBER OF COMMERCE OF PORTLAND, OREGON.

By WM. KAPUS, *Vice-President*.

Attest:

D. D. OLIPHANT,
Secretary.

IN THE SENATE OF THE UNITED STATES.

JANUARY 6, 1891.—Referred to the Committee on Indian Affairs and ordered to be printed.

Mr. PLUMB presented the following

MEMORIAL OF THE DELEGATES OF THE CREEK NATION OF INDIANS PRAYING FOR THE PASSAGE OF THE BILL (H. R. 6849) PROVIDING FOR THE PAYMENT OF AWARDS MADE TO CREEK INDIANS WHO ENLISTED IN THE FEDERAL ARMY, LOYAL REFUGEES, AND FREEDMEN:

To the Senate and House of Representatives of the United States of America:

The undersigned delegates of the Creek Nation are charged by those Creeks who enlisted in the Federal Army, loyal refugees and freedmen, with the duty of presenting and urging upon the attention of and settlement by Congress of the claims of those individuals against the Government of the United States, and in doing so we respectfully beg leave to invite your attention to the following facts, which will be stated as briefly as possible, consistent with the rights and interests involved:

THE FACTS IN THE CASE.

In 1861 a portion of the Creek Indians entered into a treaty with the so-called Confederate States, but a very large minority of the nation refused to join in that treaty, but relying in good faith upon the guaranties of their treaties with the United States, separated from their brothers, leaving their homes, property, and country, and sought the lines of the Federal Army for that protection which they had failed to secure at home. All the able-bodied men who went North joined the Federal Army, leaving the old men, women, and children to be cared for by the agents of the United States.

The Creeks had been in their home in the Indian Territory for a long time and were in an advanced state of civilization. They had good houses and large farms inclosed with good fences; they had immense herds of cattle and horses, and all the comforts and many of the luxuries of civilized life. Their houses were burned, their fences destroyed, and fields laid waste by those who were hostile to the Government of the United States and opposed to their going North, and their vast herds of cattle and horses were stolen and driven to Kansas and sold or taken to feed the United States Army, and to cattle brokers who speculated and fattened upon their misfortunes. These facts are substantiated by the records of the Interior and War Departments and would be referred to here if it were not for their prolixity.

Prominent men, merchants, military officers, Indian agents, traders, and others were charged as being implicated in this nefarious traffic. The fact that these open and glaring frauds had been committed upon these Indians by prominent people was one of the main causes which brought about the "treaty of cession and indemnity" of 1866 between the Creeks and the United States, and one of the objects of which was to indemnify these people for their losses; and this brings us to the consideration of the provisions of that treaty and certain antecedent treaty provisions and acts of Congress bearing upon the question.

TREATY OF 1866, ARTICLE 3, 14 STATUTES, 786.

By the third article of the treaty of 1866 the Creek Nation ceded, for the purposes therein stated, the western half of their entire domain, and the consideration therefor was to be disposed of as set forth therein, \$100,000 of which was to be paid to the soldiers who enlisted in the Federal Army and the loyal refugees, Indians, and freedmen who were driven from their homes by the rebel forces, to reimburse them in proportion to their respective losses. The fourth article of said treaty reads as follows, to wit:

Immediately after the ratification of this treaty the United States agree to ascertain the amount due the respective soldiers who enlisted in the Federal Army, loyal refugee Indians, and freedmen, in proportion to their several losses, and to pay the amount awarded each in the following manner, to wit: A census of the Creeks shall be taken by the agent of the United States for said nation, under the direction of the Secretary of the Interior, and a roll of the names of all soldiers who enlisted in the Federal Army, loyal refugee Indians, and freedmen, be made by him. The superintendent of Indian affairs for the southern superintendency and the agent of the United States for the Creek Nation shall proceed to investigate and determine from said roll the amounts due the respective refugee Indians, and shall transmit to the Commissioner of Indian Affairs for his approval, and that of the Secretary of the Interior; their awards so made shall be duly approved; said awards shall be paid from the proceeds of the sale of said lands within one year from the ratification of this treaty, or so soon as said amount of one hundred thousand dollars (\$100,000) can be raised from the sale of said land to other Indians.

The provisions of that article were carried out, and General W. B. Hazen, U. S. Army, Superintendent of Indian Affairs, and Capt. F. A. Field, United States Indian agent, made final report under date of April 30, 1870, accompanied by abstract of claims and awards, with the evidence upon which their action was based.

Claims were presented to them amounting in the aggregate to \$5,090,808.50, and the sum total of their allowance was \$1,836,830.41, and thereafter the Secretary of the Interior paid the \$100,000 to the claimants in proportion to their respective losses, each person receiving a fraction over 5 cents on the dollar of the amount found due him, and this 5 cents on the dollar was paid to them out of their own funds.

At the time the treaty of 1866 was made the \$100,000 item was explained to them as only a payment in part. The fourth article was explained to and understood by them as providing a means of ascertaining the amount of their losses, for which they should be paid in full; that the eleventh article had reference to annuities which had been diverted, under the joint resolution of February 22, 1862 (12 Statute, 614), the act of July 5, 1862 (Id., 528), the act of March 3, 1863 (Id., 793), and the act of June 24, 1864 (13 Statute, 180), and other claims of a national character, and that article 12 confirmed all their rights under article 18 of the treaty of 1856; and under these circumstances the representatives of our people signed the treaty of 1866.

ARTICLE 18, TREATY OF 1856, 11 STATUTE, 704.

Now, we desire to invite your attention to the eighteenth article of the treaty of 1856 between the United States and the Creeks and Seminoles, whereby it was agreed that—

The United States shall protect the Creeks and Seminoles from domestic strife, from hostile invasion, and from aggression from other Indians and white persons not subject to their jurisdiction and laws; and for all injuries resulting from such invasion or aggression full indemnity is hereby guaranteed to the party or parties injured, out of the Treasury of the United States, upon the same principles and according to the same rules which white persons are entitled to indemnity for injuries or aggressions upon them committed by Indians.

This article brought the Creek and Seminole Indians within the provisions of the seventeenth section of the act of June 30, 1834, and known as the intercourse laws, which provides, in substance, that when a white person shall have property stolen or destroyed by Indians, such white person shall receive full payment therefor out of the annuities of the nation or tribe of Indians to which the Indians committing the depredations belong; but if such tribe or nation has no annuity, then the amount to be paid out of the Treasury of the United States. The last clause of this act was repealed by the 8th section of the act of February 28, 1859 (11 Statute, 401), but the liability of the United States in this class of claims was again recognized by the last clause of section 7 of the act of May 29, 1872, which provides that no payment on account of such claims shall be made without a specific appropriation therefor by Congress, and the Government of the United States has at various times since adjudicated and paid claims of this class.

DEPREDATION AGAINST THE PERSON AND PROPERTY OF INDIANS.

Claims of Indians for depredations committed by white persons come within the purview of sections 2154 and 2155 of the United States Revised Statutes, which provide, in substance, that when a white person shall be convicted of the commission of any crime or offense in the Indian country, and by reason of such crime or offense the property of any friendly Indian is taken, injured, or destroyed, he shall pay a sum equal to twice the value of the property so taken, injured, or destroyed, and if such offender can not be apprehended and brought to trial, the amount of such property shall be paid out of the Treasury.

There is an item in the act of July 5, 1862 (12 Statutes, 528), which provides:

That in case where the tribal organization of any Indian tribe shall be in actual hostility to the United States, the President is hereby authorized, by proclamation, to declare all the treaties with such tribe to be abrogated by such tribe, if, in his opinion, the same can be done consistently with good faith and legal national obligations.

Now, as a matter of fact, that great wise man and noble-hearted President, Abraham Lincoln, seeing that "good faith and legal and national obligations" toward a very large minority of the Creek Nation of Indians who were loyal to the Government of the United States, would be violated by the exercise of the authority vested in him, never issued the required proclamation, in consequence of which all treaty provisions with the Creek Nation remained in full force and effect. We desire to invite particular attention to the fact that the proclamation was never issued, as we shall take occasion to refer to it further on.

The matter of the claims of these Indians was before the Court of Claims (Thomas Connor, *et al.* v. The United States, 19 Court of Claims, 675), in which case, relying on an imperfect statement of the facts, the

court "decided as a conclusion of law that all claims which the petitioners had against the United States for damages and losses growing out of the late rebellion were adjusted, settled, and released by the treaty of 1866, and the payment thereunder of \$100,000, as provided in article 3, and that the claimants, having received that sum are not entitled to be paid any further amount," and further the court says:

The course of procedure taken by the Commissioner of Indian Affairs and the Secretary of the Interior in relation thereto, were in strict conformity with the treaty obligations, and the claimants, having received each his proportion according to his losses of the money awarded for that purpose, they are entitled to no more.

If there should have been added to the sentence just quoted the words "out of the funds of the Creek Nation," we could not question the conclusions of the court, for that was the only fund mentioned in the treaty and the only one under consideration by the court.

The court again says it is true that the twelfth article of the treaty of 1866 does declare—

The United States reaffirms and reassumes all obligations with the Creek Nation entered into before the treaty of said Creek Nation with the so-called Confederate States, July 10, 1861, not inconsistent herewith.

But the effect of that provision was clearly to renew the former treaties from that date, and nothing more. It would be an unreasonable interpretation to put upon it that the United States agreed to be responsible for all obligations on their part contained in the treaties during the time the Creek Nation was, with other public enemies, at war with them, and yet, while making a new treaty, they provided the means of settling such obligations in part, as contended by the claimants.

The eleventh article of the treaty of 1866 expressly declares that—

The stipulations of this treaty are to be in full settlement of all claims of said Creek Nation for damages and losses of every kind growing out of the late rebellion.

It is urged by the claimants that this provision applies only to national claims, while their demands are individual and personal. But that position is not warranted by the law or facts in the case. The claims of individual members who bring this action were claims of the nation within the rules of international law. (Great Western Insurance Company, case 206, *ante*.) Moreover, their payment as agreed upon was provided for by the treaty itself.

Now, we desire to show that the reasons and rulings of the court are inconsistent with the law and facts in the case.

First. The court held that the provisions of article 12 of the treaty of 1866, reaffirming and reassuming former treaty obligations, was to "renew" such obligations "from that date." This, we submit, is in violation of all rules of construction. The President of the United States never having issued his proclamation abrogating the treaties with the Creeks, all treaty provisions theretofore made were still in full force and effect at the date of the treaty of 1866, and no provision of treaty was "renewed" from that or any other date. The United States simply reaffirmed and reassumed certain obligations. It was an agreement that the former treaty stipulations not inconsistent with those of the treaty of 1866 should still remain in force. Nothing more and nothing less. The twelfth article of the treaty of June 14, 1866, specially confirms all previous treaty obligations not inconsistent with that one. (H. R. Report 78, Forty-second Congress, third session, page 302.)

Second. We believed the court erred in its construction of the eleventh article of the treaty of 1866 in holding that these claims were claims of the nation. The very article of the treaty under consideration

by the court contradicts this construction. That article recognizes and defines these claims as individual and personal and not national. The assertion of the claimants that the eleventh article of the treaty of 1866 relates to national claims is correct. That article says, "all claims of the Creek Nation," and not claims of individuals.

It seems very plain to us that the object of the treaty of 1866 was to ascertain the amount of the losses sustained by these people to the end that they might receive their pro rata share, in proportion to their losses, of the \$100,000 chargeable against the general Creek fund, and that the balance of the amount should be a charge against the United States under the 18th article of the treaty of 1856, and it was so explained to them at the time. Rules of interpretation favorable to the Indian tribes are to be adopted in construing our treaties with them (U. S. Supreme Court, 7 Wall., 737), and we submit that under that article, which is still in full force and effect, without at all considering the third and fourth articles of the treaty of 1866, the United States is bound to these people for every dollar of the losses sustained by them.

We further submit that, without considering any provision of treaty between the United States and the Creek Nation, the United States are bound to these people for the amount awarded them by virtue of the same laws, and in the same sense of justice and equity, under which the United States has assumed and paid like losses sustained by white men.

The sum of \$1,836,830.41 awarded to these people would not, by a large amount, cover the value of their cattle taken to subsist the United States Army.

The United States Supreme Court, in the case of *Wright vs. Tibbitts* (91 U. S. R., 252), held that a commission appointed under the Choctaw and Chickasaw treaty of 1866, for a purpose similar to that for which General Hazen and Captain Field were designated under the Creek treaty of 1866, was a *quasi* court. It was, in no material respect, for all the purposes of this controversy, different from the "Court of Commissioners of Alabama Claims," of the "Southern Claims Commission," or "the Mexican Claims Commission," or "Spanish Claims Commission," which have been called together, in pursuance of treaty stipulations or otherwise, to settle and adjust disputed claims, for the purpose of their ultimate payment and satisfaction.

This case is particularly applicable to the claims of the persons we represent. When the Commission, the "quasi court," passed upon these claims, they assumed the nature of an ascertained debt, "for the purpose of their ultimate payment and satisfaction."

What a travesty on justice, reason, and common sense it would be for the United States to say to these people:

"You were loyal; you were patriotic; you were driven from your homes; your houses were burned and your stock stolen and driven off; you served in the Army of the United States at the time of the Government's greatest need; you sacrificed home and country, and espoused the cause of the Union, and by reason of all this you lost property to the value of more than \$5,000,000, accumulated by long years of thrift and industry, and a large amount of which was taken to subsist the Army in which you battled for the rights of the Government of the United States. Now the United States will purchase a portion of your lands, owned absolutely by you, and out of the consideration to be paid therefor, your own money, too, the Government will take \$100,000 and pay you that amount for the \$5,000,000 worth of property lost by you. You shall suffer this loss as a penalty for your loyalty, your patriotism,

and your service to the Government of the United States. That is the settlement the Government will make with you. The persons who were legally appointed and constituted to investigate your losses scaled them down from \$5,000,000 to \$1,800,000; the Government will further scale them down to \$100,000, and then pay you that sum out of your own money."

We do not believe that your sense of honor and justice will permit you to take this view of the matter, but that in the consideration of these claims you will adopt that broader, more humane, more comprehensive, and more dignified policy which should be adopted by a great Government toward an inferior and wronged people, who, while owing it no allegiance, were second to none of your best citizens in loyalty, patriotism, and devotion to your Government. We further believe that in dealing with the rights of these people you will deal with them as you would deal with the rights of other persons, according to a reasonable, just, and fair interpretation of the contract made with them, constantly bearing in mind that your Government occupies to these claimants the relation of guardian to ward, and that you will carefully and jealously guard, adjust, settle, and pay the amount of the awards to these people, made in conformity with solemn treaty stipulation.

Since the happy and fortunate hour in which these claimants were released from military duties, in consequence of peace restored and the creation of the treaty of 1866, under which these awards were made, the men who served in the Army of the United States have in the ordinary course of nature been passing to the stillness of the grave. Let those who still survive receive your benediction of justice before they pass to "that undiscovered country from whose bourne no traveler returns."

Your petitioners and memorialists therefore respectfully and most earnestly pray that as a means of settlement of these legal claims, as well as a matter of justice, equity, and good faith, your honorable bodies will enact into a law House bill No. 6849, entitled "A bill providing for the payment of awards made to Creek Indians who enlisted in the Federal Army, loyal refugees, and freedmen."

D. M. HODGE,
A. P. McKELLOP,
his
THOMAS + KNIGHT,
mark.

National Delegates and Agents of the Loyal Creeks.

IN THE SENATE OF THE UNITED STATES.

JANUARY 8, 1891.—Referred to the Committee on Appropriations and ordered to be printed.

Mr. TELLER presented the following newspaper communication of Sheldon Jackson, urging the importation by the Government of the Siberian reindeer into Alaska Territory for the benefit and relief of the inhabitants of that Territory.

Alaska—Starvation ahead—Domesticate the reindeer and save the people—Moss meadows are the reindeer's pastures—In ten years they increase thirteen times—The Bear will bring them from Siberia—An agricultural experiment station wanted.

From time immemorial the Alaskans have lived upon the whale, the walrus, and the seal of their coasts, the fish and the aquatic birds of their rivers, and the caribou or wild reindeer of their vast inland plains.

The supply of these in years past was abundant and furnished ample food for all the people.

WHALES ARE DISAPPEARING.

But fifty years ago American whalers, having largely exhausted the supply in other waters, found their way into the Northern Pacific Ocean. Then commenced for that section the slaughter and destruction of whales that went steadily forward at the rate of hundreds and thousands annually, until they were destroyed and driven out of the Pacific Ocean. They were then followed into Bering Sea and the slaughter went on. The whales took refuge among the ice fields of the Arctic Ocean and thither the whalers followed. In this relentless hunt the remnant have been driven still farther into the inaccessible regions around the North Pole and are no longer within reach of the natives.

As the great herds of buffalo that once roamed the western prairies have been exterminated for their pelts, so the whales have been sacrificed for the fat that encased their bodies and the bone that hung in their mouths. With the destruction of the whale one large source of food supply for the natives has been cut off.

SO ARE WALRUSES.

Another large supply of food was derived from the walrus, which once swarmed in great numbers in these northern seas. But commerce wanted more ivory, and the whalers turned their attention to the walrus, destroying thousands annually for the sake of their tusks. Where a few years ago they were so numerous that their bellowings were heard above the roar of the waves and grinding and crashing of the ice fields, this year I cruised for weeks without seeing or hearing one. The walrus as a source of food supply is already practically extinct.

The seal and sea lion, once so common in Bering Sea, are now becoming so scarce that it is with difficulty that the natives procure a sufficient number of skins to cover their boats, and their flesh, on account of its rarity, has become a luxury.

CANS CANNIBALIZE THE SALMON.

In the past the natives, with tireless industry, caught and cured for use in their long winters great quantities of fish, but American canneries have already come to some of their streams, and will soon be found on all of them, both carrying the food out of the country and, by their wasteful methods, destroying the future supply. Five million cans of salmon annually shipped away from Alaska—and the business still in its infancy—means starvation to the native races in the near future.

With the advent of improved breech-loading firearms the wild reindeer are both being killed off and frightened away to the remote and more inaccessible regions of the interior, and another source of food supply is diminishing.

Thus the support of the people is largely gone and the process of slow starvation and extermination has commenced along the whole Arctic coast of Alaska. Villages that once numbered thousands have been reduced to hundreds; of some tribes but two or three families remain. At Point Barrow, in 1828, Captain Beechey's expedition found Nuwuk, a village of 1,000 people; in 1863 there were 309; now there are not over 100. In 1826 Captain Beechey speaks of finding a large population at Cape Franklin; to-day it is without an inhabitant. He also mentions a large village of 1,000 to 2,000 people on Schismareff Inlet; it has now but 3 houses.

ARCTIC ESQUIMAUX DECREASING.

According to Mr. John W. Kelly, who has written a monograph upon the Arctic Esquimaux of Alaska, Point Hope, at the commencement of the century, had a population of 2,000; now it has about 350. Mr. Kelly further says:

The Kavea country is almost depopulated, owing to the scarcity of game, which has been killed or driven away. * * * The coast tribes between Point Hope and Point Barrow have been cut down in population so as to be almost obliterated. The Kookpovoros of Point Lay have only three huts left; the Ootookas of Icy Cape, one hut; the Koogmute has three settlements of from one to four families; Sezaro has about eighty people.

Mr. Henry D. Woolfe, who has spent many years in the Arctic region, writes:

Along the sea coast from Wainright Inlet to Point Lay numerous remains of houses testify to the former number of the people. * * * From Cape Seppings to Cape Krusenstern and inland to Nounatok River there still remain about forty people—the remnant of a tribe called Key-wah-ling-nach-ah-mutes. They will in a few years entirely disappear as a distinctive tribe.

I myself saw a number of abandoned villages and crumbling houses during the summer, and wherever I visited the people I heard the same tale of destitution.

On the island of Attou, once famous for the number of its sea-otter skins, the catch for the past nine years has averaged but three sea-otter and twenty-five fox skins, an annual income of about \$2 for each person. The Alaska Commercial Company this past summer sent \$1,300 worth of provisions to keep them from starving.

At Akutan the whole catch for the past summer was nineteen sea otters. This represents the entire support of one hundred people for twelve months. At Unalaska both the agent of the Alaska Commercial Company and the teacher of the Government school testified that there would be great destitution among the people this winter because of the disappearance of the sea otter. At St. George Island the United States Treasury agent testified that there was not sufficient provision on the island to last through the season, and asked that a Government vessel might be sent with a full supply. At Cape Prince of Wales, Point Hope, and Point Barrow was the same account of short supply of food. At the latter place intimations were given that the natives in their distress would break into the Government warehouse and help themselves to the supply that is in store for shipwrecked whalers. At Point Barrow, largely owing to the insufficient food supply, the death rate is reported to the birth rate as 15 to 1. It does not take long to figure out the end. They will die out more and more rapidly as the already insufficient food supply becomes less and less.

THE REINDEER IS EVERYTHING.

In this crisis it is important that steps should be taken at once to afford relief. Relief can, of course, be afforded by Congress voting an appropriation to feed them, as it has so many of the North American Indians. But every one familiar with the feeding process among the Indians will devoutly wish that it may not be necessary to extend that system to the Esquimaux of Alaska. It would cost hundreds of thousands of dollars annually, and, worse than that, degrade, pauperize, and finally exterminate the people. There is a better, cheaper, more practical and more humane way, and that is to introduce into northern Alaska the domesticated reindeer of Siberia, and train the Esquimaux young men in their management, care, and propagation.

This would in a few years create as permanent and secure a food supply for the Esquimaux as cattle or sheep raising in Texas or New Mexico does for the people of these sections.

It may be necessary to afford temporary relief for two or three years to the Esquimaux, until the herds of domestic reindeer can be started, but after that the people will be self-supporting.

In the Arctic and sub-Arctic regions of Lapland and Siberia the domesticated reindeer is food, clothing, house, furniture, implements, and transportation to the people. Its milk and flesh furnish food; its marrow and tongue are considered choice delicacies; its blood mixed with the contents of its stomach is made into a favorite dish called in Siberia "manyalla;" its intestines are cleaned, filled with tallow and eaten as a sausage; its skin is made into clothes, bedding, tent covers, reindeer harness, ropes, cords, and fish lines; the hard skin of the fore-legs makes an excellent covering for snow-shoes.

Its sinews are dried and pounded into a strong and lasting thread; its bones are soaked in seal oil and burned for fuel; its horns are made into various kinds of household implements—into weapons for hunting and war, and in the manufacture of sleds.

Indeed, I know of no other animal that in so many different ways can minister to the comfort and well-being of man in the far northern regions of the earth as the reindeer.

The reindeer form their riches; these their tents,
Their robes, their beds, and all their homely wealth supply;
Their wholesome fare and cheerful cups.

Under favorable circumstances a swift reindeer can traverse 150 miles in a day. A speed of 100 miles per day is easily made. As a beast of burden they can draw a load of 300 pounds. They yield a cupful of milk at a milking; this small quantity, however, is so thick and rich that it needs to be diluted with nearly a quart of water to make it drinkable. It has a strong flavor, like goat's milk, and is more nutritious and nourishing than cow's milk. The Lapps manufacture from it butter and cheese. A dressed reindeer in Siberia weighs from 80 to 100 pounds. The reindeer feed upon the moss and other lichens that abound in the Arctic regions, and the farther north the larger and stronger the reindeer.

A BIG PASTURE OF TUNDRA.

Now, in Central and Arctic Alaska are between 300,000 and 400,000 square miles (an area equal to the New England and Middle States combined, together with Ohio, Indiana, and Illinois) of moss-covered tundra and rolling plains of grass that are specially adapted by nature for the grazing of the reindeer, and are practically useless for any other purpose.

If it is a sound public policy to bore artesian wells, and to build water-storage reservoirs, by which thousands of arid acres can be reclaimed from barrenness and made fruitful, it is equally a sound public policy to stock the plains of Alaska with herds of domesticated reindeer, and cause those vast, dreary, desolate, frozen, and storm-swept regions to minister to the wealth, happiness, comfort, and well-being of man. What stock raising has been and is on the vast plains of Texas, Colorado, Wyoming, and Montana, reindeer raising can be in northern Alaska. In the corresponding regions of Lapland, in Arctic Norway, and in Sweden and Russia are 27,000 people supporting themselves (besides paying a tax to the Government of \$400,000, or \$1 per head for their reindeer) and procuring their food and clothing largely from their 400,000 domesticated reindeer. Also in the corresponding regions of Siberia, with similar climate, soil, and environment (and only 40 miles distant at the straits), are thousands of Chukchees, Koraks, and other tribes fed and clothed by their tens of thousands of domesticated reindeer.

THE SIBERIANS ARE FAT.

During the past summer I visited four settlements of natives on the Siberian coast, the two extremes being 700 miles apart, and saw much of the people, both of the Koraks and Chukchees. I found them a good-sized, robust, fleshy, well-fed, pagan, half-civilized, nomad people, living largely on their herds of reindeer. Families own from one thousand to ten thousand deer. These are divided into herds of from one thousand to one thousand five hundred. One of these latter I visited on the beach near Cape Navarin. In Arctic Siberia the natives with their reindeer have plenty; in Arctic Alaska, without the reindeer, they are starving.

Then instead of feeding and pauperizing them, let us civilize, build up their manhood, and lift them into self-support by helping them to the reindeer. To stock Alaska with reindeer and make millions of acres of moss covered tundra conducive to the wealth of the country would be a great and worthy event under any circumstances.

But just now it is specially important and urgent from the fact stated in the opening of this report, that the destruction of the whale

and walrus has brought large numbers of Esquimaux face to face with starvation, and that something must be done promptly to save them.

The introduction of the reindeer would ultimately afford them a steady and permanent food supply.

AGRICULTURAL EXPERIMENT STATION.

Passing from Northern Alaska, with its adaptation to reindeer raising, we find the whole southern coast, stretching for thousands of miles, to possess a temperate climate. This is due to the "Kuro-siwe" or "Japan Current" of the Pacific Ocean. In this "temperate belt" it is probable that there are areas of greater or less extent that are adapted to agriculture. At least it is known that there are small farms or vegetable gardens on Kodiak and Afognak Islands, on the shores of Cook's Inlet, and in Southeastern Alaska. It is also known that wild berries grow in great profusion and abundance in many sections. But no intelligent and continued experiments have been made to test the agricultural and horticultural capabilities of the country.

FUR TRADERS AND GOLD SEEKERS.

Until a quite recent period (1867) the European population were fur-trading Russians. They were followed by fur-trading Americans, and more recently by the gold seekers. No one expected to remain long in the country, and there has been no incentive to carry forward intelligent experiments in agriculture.

As early as 1885 I called attention to the fact that there was a very wide diversity of views concerning the agricultural and horticultural capabilities of Alaska, and necessarily very great ignorance; that no systematic effort intelligently prosecuted had ever been made to ascertain what could or what could not be raised to advantage; that it was of very great importance, both to the people of Alaska and the country at large, that careful experiments should be made, extending over a term of years, to ascertain the vegetables, grains, grasses, berries, apples, plums, trees, flowers, etc., best adapted to the country; the best methods of cultivating, gathering, and curing the same; the planting and grafting of fruit trees; the development of the wild cranberry, cattle, hog, and poultry raising; butter and cheese making, etc. In 1886 my recommendation was taken up by the United States Commissioner of Agriculture. He said:

The Industrial Training School at Sitka would furnish an admirable basis for a station, where could be conducted careful experiments to ascertain the agricultural products best adapted to the climate and soil of the Territory, and what breeds of cattle and other domestic animals are most suited to its climate and soil.

Such an experiment ought to extend over a series of years.

DOMESTICATED REINDEER.

In view, therefore, of the national importance of introducing the domesticated reindeer of Siberia into Northern Alaska, and testing the agricultural capacity of Southern Alaska, I most earnestly recommend the establishment of an "agricultural school and experiment station" in connection with the system of industrial education in Alaska.

By an act approved July 2, 1862, Congress made provision for schools for the "benefit of agriculture and the mechanic arts." By an act approved March 2, 1887, provision was made for "agricultural experiment

stations" in connection with the agricultural schools. And by the act approved August 30, 1890, certain of the proceeds of the sale of public lands were set aside for the better support of these agricultural schools.

These acts of Congress require the assent of the legislature of the State or Territory in order that their provisions may become available.

But Alaska has no legislature and is governed directly by Congress. On this account, and partly because nineteen-twentieths of the children to be benefited belong to the native races, Congress has committed to the Secretary of the Interior the duty of making "needful and proper provisions for education in Alaska." It is, therefore, eminently proper that he should be authorized to extend to Alaska the benefits of the agricultural acts of 1887 and 1890, and secure the establishment of a school that can introduce reindeer into that region, and teach their management, care, and propagation, and also to conduct a series of experiments to determine the agricultural capabilities of the country.

To reclaim and make valuable vast areas of land otherwise worthless; to introduce large, permanent, and wealth-producing industries where none previously existed; to take a barbarian people on the verge of starvation and lift them up to a comfortable self-support and civilization, is certainly a work of national importance.

It was my good fortune to make my visit to the Esquimaux in the United States revenue steamer *Bear*, commanded by Capt. Michael A. Healy, who has made an annual cruise in those waters for ten years past. Having seen much of the native population and taken a great interest in their welfare, he has probably a better knowledge of their condition and necessities than any other person.

When, therefore, I suggested the feasibility of introducing the domesticated reindeer of Siberia into Alaska in connection with the Government industrial schools he immediately indorsed the proposition and rendered me much assistance in pursuing my inquiries with regard to the subject. He is also ready to coöperate in carrying out any plan that may be devised.

SHELDON JACKSON.

SITKA, ALASKA.

Captain Healy testifies.

Under orders from the Secretary of the Treasury, I have been ten years on the Bering Sea and Arctic Ocean station of the United States Revenue Marine Service.

My duties have brought me very closely in contact with and greatly interested me in the native population.

On account of this interest I have watched with pleasure the coming among them of the missionaries of the several churches and the teachers of the Government schools.

FOOD DISAPPEARING.

I have also seen with apprehension the gradual exhaustion of the native food supply.

From time immemorial they have lived principally on the whale, seal, walrus, salmon, and wild reindeer. But in the persistent hunt of white men for the whale and walrus, the latter has largely disappeared, and the former been driven beyond the reach of the natives. The white men are also erecting canneries on their best fishing streams, and the usual

supply of fish is being cut off; and, with the advent of improved fire-arms, the wild reindeer are migrating farther and farther away.

I have consulted with a few of the leading teachers, missionaries, traders, and whaling captains, and they, without a single exception, agree that the most practical relief is the introduction of domesticated reindeer into that portion of Northern and Arctic Alaska adapted to them.

In Siberia, but a few miles from Alaska, with climate and country of similar conditions, are tens of thousands of tame reindeer supporting thousands of people, and it will be a very easy and comparatively cheap matter to introduce the tame reindeer of Siberia into Alaska and teach the natives the care and management of them.

As in connection with the industrial schools in Dakota, Indian Territory, and elsewhere the Indian boy is taught the raising of stock, so in the industrial schools of Alaska it is proposed to teach the Esquimaux young men the raising of tame reindeer.

SAVE MILLIONS OF DOLLARS.

A few thousand dollars expended now in the establishment of this new industry will save hundreds of thousands hereafter. For if the time comes when the Government will be compelled to feed these Esquimaux it will cost over \$1,000,000.

With an assured support, such as will come from herds of tame reindeer, there is no reason why the present population shall not be increased in numbers and advanced to the position of civilized, wealth-producing American citizens.

M. A. HEALY,
Captain U. S. S. Bear.

The Yukon River explorer testifies.

My experience in Alaska permits me to state on authority, that the next decade will witness the extinction of the American reindeer, or rather caribou. In 1881, when I first visited the district of Norton and Kotzebue Sounds and the lower Yukon, deer were plentiful. This past winter (1889) not a single animal had been seen within a radius of 200 miles. Similar conditions are coexisting from Port Clarence to Point Barrow, and where in former years the hunters had to travel but 50 miles to reach the deer haunts, to day they traverse twice that distance. These contingencies arise from three causes:

1. The indiscriminate slaughter of young and old animals.
2. The use at the present day of improved weapons of the chase in lieu of the primitive bows, arrows, and spears.
3. The conditions of wind prevailing at the seasons when the deer go to and from the coast. It must be distinctly understood that upon a supply of these animals our Alaskan Esquimaux depend for clothing as well as their store of meat should their pelagic sources of provender fail.

BUT LITTLE MONEY NEEDED.

The proposition to introduce deer from the Siberian herds can be effected at a cost of but a few thousand dollars.

The location for the first experimental station should be on Choris Peninsula or the vicinity of Kotzebue Sound. This location has climatic similarities with Siberia. The deer food (moss) supply is abundant and herding easy.

As the results of this initial experiment become manifest, additional locations for herds can be established. Within two seasons the Chukchee herdsmen will be able to instruct the Esquimaux in the style of herding.

I have made inquiries upon the subject and now give you the result. Ten years ago the Russian steamer *Alexander* went to the Kamchatka Peninsula, and officers of the Alaska Commercial Company bought seven male and seven female deer, transporting them to Bering Island (one of the islands leased by the company from Russia). Captains Blair and Greenberg and Superintendent Lubegoil inform me that the herd now numbers one hundred and eighty. From this you can judge the rate of propagation.

The revenue steamer *Bear* can be utilized for transportation, and I know of no man more capable of conducting the experiment than Captain Healy.

I hope that the small sum required will be voted by Congress, as unless something is done for these people their annihilation is only a question of a brief period.

The whalers have so frightened the big fish that the natives are unable to pursue them in their rapid passage, while the extermination of the walrus is almost a fact.

These remarks I present as requested.

HENRY D. WOOLFE,

SAN FRANCISCO.

The Commissioner of Education approves the plan.

If this very desirable legislation is granted, and under its provisions a suitable school is established, it will be a comparatively easy matter to purchase in Siberia a herd of domesticated reindeer, transport them to Alaska, and give instruction in their care and management.

This would be a great step forward in lifting the native races of that boreal region out of barbarism and starting them toward civilization, a step from the grade of wild hunter to the grade of herdsmen who live on domesticated cattle, and besides this furnish an article of exportation and commerce. The native tribes on the Siberian side are thriving with their herds of reindeer.

It seems that all northern Alaska is filled with moss meadows (tundra), which furnish the very food that the reindeer requires.

Once started the business would grow into large proportions, and the most serious problem that threatens Alaska will be solved.

W. T. HARRIS,
Commissioner.

IN THE SENATE OF THE UNITED STATES.

JANUARY 10, 1891.—Presented by Mr. EDMUNDS and ordered to lie on the table and be printed.

MEMORIAL OF THE CITIZENS OF THE DISTRICT OF COLUMBIA
PRAYING THE PASSAGE OF THE BILL TO RESTRICT THE SMOK-
ING OF CIGARETTES, CIGARS, AND THE USE OF TOBACCO BY
MINORS IN THE DISTRICT OF COLUMBIA.

The following twenty-nine States have passed laws forbidding the sale of cigarettes and tobacco to minors under certain ages :

Maine.	South Carolina.	Kansas.
New Hampshire.	Georgia.	Nebraska.
Vermont.	Alabama.	North Dakota.
Massachusetts.	Kentucky.	South Dakota.
Connecticut.	Ohio.	Wyoming.
New York.	Indiana.	Idaho.
New Jersey.	Illinois.	Nevada.
Pennsylvania.	Michigan.	Oregon.
Maryland.	Minnesota.	Washington.
Virginia.	Arkansas.	

New York and Connecticut have in addition made it unlawful for minors under sixteen years of age to smoke or use tobacco in any public place, or resort.

SYNOPSIS OF STATE LAWS PROHIBITING THE SALE OF CIGARETTES
OR TOBACCO TO MINORS UNDER CERTAIN AGES.

Maine: Approved February 28, 1889. Age under sixteen years. Fine not to exceed \$50.

Selling absolutely prohibited, also giving by other than minor's parent or guardian.

New Hampshire: Approved August 5, 1885. Age under sixteen years. Fine \$20 for each violation.

Vermont: Approved November 22, 1888. Age under sixteen years. Fine not to exceed \$20.

Giving absolutely prohibited, also selling except upon the written order of the minor's parent or guardian.

Massachusetts: Approved March 17, 1886. Age under sixteen years. Fine not exceeding \$50.

This act makes it unlawful for any person or persons to persuade, advise, counsel, or compel any child under said age to smoke or chew tobacco.

Connecticut: Approved April 3, 1889. Age under sixteen years. Fine not more than \$50.

There is also the following additional provision:

No person under sixteen years of age shall have, smoke, or in any way use in any public street, place, or resort, any tobacco in any form whatsoever.

Any person violating the provisions of this section shall be fined not more than \$7 for each offense.

New York: Approved April 22, 1889. Age under sixteen years.

A person who sells, pays for, or furnishes any cigar, cigarette, or tobacco in any of its forms to any child actually or apparently under the age of sixteen years is guilty of a misdemeanor.

The following supplemental act went into effect September 1, 1890:

No child actually or apparently under sixteen years of age shall smoke or in any way use any cigar, cigarette, or tobacco in any form whatsoever in any public street, place, or resort.

A violation of such provision shall be a misdemeanor and shall be punished by a fine not exceeding \$10 nor less than \$2 for each offense.

New Jersey: Approved March 22, 1883. Age under sixteen years. Fine \$20.

Pennsylvania: Approved May 7, 1889. Age under sixteen years. Fine not more than \$300.

This law relates simply to cigarettes.

Maryland: Approved April 7, 1886. Age under fourteen years. Fine not less than \$10 nor more than \$100, or, in default, imprisonment not less than five nor more than thirty days.

Exception made where there is a written order of parent or guardian, or when such minor is acting solely as the agent of his employers.

Virginia: Approved February 28, 1890. Age under sixteen years. Fine not less than \$10 nor more than \$100.

South Carolina: Approved 1889. Age under eighteen years. Fine not exceeding \$100 nor less than \$25. Imprisonment not less than two months nor more than one year, or both, in the discretion of the court.

Georgia: Approved September 19, 1889. Amended November 4, 1889. Age under twenty-one years.

This act includes cigarette paper. Violation of this law is a misdemeanor, and punishable as prescribed in section 4310 of the Code of Georgia, 1882.

Alabama: Approved December 11, 1890. Age under eighteen years. Fine not less than \$10 nor more than \$50, or imprisonment at hard labor not more than thirty days.

Kentucky: Approved February 14, 1890. Age under eighteen years. Fine not less than \$5 nor more than \$25, or imprisonment not exceeding thirty days, or both fine and imprisonment.

Ohio: Passed April 10, 1888. Age under fifteen years. Fine not less than \$5 nor more than \$25, or imprisonment not more than thirty days, or both fine and imprisonment.

Indiana: Approved March 9, 1889. Age under sixteen years. Fine not less than \$1 nor more than \$10.

This act makes it unlawful for any person or persons to persuade, advise, counsel, or compel any child under said age to smoke or chew tobacco.

Illinois: Approved June 15, 1887. Age under sixteen years. Fine \$20.

Exception where there is written order of parent or guardian.

Michigan: Approved May 8, 1889. Age under seventeen years. Fine not less than \$5 nor more than \$50, or imprisonment not less than

ten days nor more than thirty days, or both fine and imprisonment, in the discretion of the court.

Exception made where there is a written order from parent or guardian.

Minnesota: Approved April 2, 1889. Age under sixteen years. Fine \$50, or imprisonment not more than thirty days, or both fine and imprisonment.

Arkansas: Approved February 22, 1889. Age under fifteen years. Fine not less than \$10 nor more than \$50.

Kansas: Passed 1889. Age under sixteen years. Fine not less than \$5 nor more than \$25.

This act also prohibits the selling, giving, or furnishing of opium or other narcotics, except upon the prescription of a physician.

Nebraska: Approved February 24, 1885. Age under fifteen years. Fine \$25.

North Dakota: Approved February 13, 1890. Age under sixteen years. Imprisonment not more than thirty days, or a fine of not more than \$50, or both imprisonment and fine.

Exception made where there is a written order of parent or guardian.

South Dakota: Approved February 26, 1890. Age under sixteen years. Fine not to exceed \$50, or imprisonment not to exceed ten days, or both fine and imprisonment.

Wyoming: Approved February 24, 1890. Age under fifteen years. Fine not to exceed \$10 and the costs of the prosecution.

This law includes cigarette paper.

Idaho: Approved February 7, 1889. Age under twenty-one years. Fine \$100 and costs.

Nevada: Approved March 7, 1889. Age under eighteen years. Fine not exceeding \$500 nor less than \$100, or imprisonment not exceeding six months nor less than fifty days.

Exception made where there is a written order of parent or guardian.

Oregon: Approved February 18, 1889. Age under eighteen years. Fine not less than \$20 nor more than \$50.

Exception is made where there is a written order of parent or guardian.

Washington: Approved November 26, 1884. Age under sixteen years. Fine not less than \$10 nor more than \$50.

WASHINGTON, D. C., January 5, 1891.

DEAR SIR: I have been requested to state briefly some of the bad effects of cigarette smoking on the young.

1. The tobacco habit retards the growth and development of the young by its influence on the heart and nervous system.

2. Cigarettes are almost always contaminated (fortified) by the addition of some form of opium, and thus the opium habit is apt to follow the tobacco habit.

3. The excessive use of tobacco creates a craving for alcoholic stimulants—and intemperance frequently results.

4. The paper in which cigarettes are wrapped often contains arsenic.

5. A habit of this sort in the young engrosses the thoughts and turns away their attention from proper channels.

6. And in conclusion I can not express too strongly, from a medical point of view, my opinion of the grave deleterious effects of the use of tobacco—especially by cigarette smoking—by young persons.

Yours, respectfully,

D. WEBSTER PRENTISS, M. D.,
Professor Materia Medica and Therapeutics,
Columbian University, District of Columbia, and
President of the Medical Society of the District of Columbia.

5 JANUARY, '91.

Dr. Prentiss has expressed my views exactly and I hope the bill may become a law and be enforced.

JOS. TABER JOHNSON, M. D.,
926 Farragut Square.

Hon. JAMES McMILLAN,
U. S. Senate.

WASHINGTON, D. C., December 20, 1890.

DEAR MADAM: Your letter of the 19th instant was duly received, and I am very willing to add my name to the "bill to prohibit the selling, giving, or furnishing cigarettes or tobacco in any form to minors under sixteen years of age in the District of Columbia." Many cases have fallen under my notice of minors suffering from nervous diseases and general impairment of the powers of mind and body from the use of tobacco, and more especially from cigarette smoking. I look upon this habit as almost equal to that of the use of alcohol, as the latter often follows as a necessary consequence. Wishing you success in the good work that you have undertaken, believe me,

Very respectfully yours,

D. R. HAGNER, M. D.

Mrs. EMMA F. SHELTON.

To the Senate and House of Representatives in Congress assembled:

Whereas we believe the use of tobacco to be one of the chief sources of demoralization among the youth of the District of Columbia; and

Whereas in our thirty years' experience in teaching more than fifty thousand young people we have found the effects of this narcotic to be precocious development of evil passions, premature age, shattered nerves, mental weakness, stunted growth, and general physical and moral degeneracy, and therefore now decline to receive into our institution any who use this noxious weed; and

Whereas we believe the mental and moral welfare of the young people of this community require legal protection from the ever vigilant emissaries of this form of vice:

Therefore we, the undersigned citizens of the United States and residents of the District of Columbia, do respectfully urge upon your honorable body the immediate consideration of Senate bill No. 4560.

HENRY C. SPENCER,
Principal Spencerian Business College.
SARA A. SPENCER,
Vice Principal.

FREEDMEN'S HOSPITAL,
Washington, D. C., December 30, 1890.

DEAR MADAM: Your letter requesting me to give my views from a medical standpoint why Congress should enact a law prohibiting the sale of cigarettes to minors was duly received.

When I was trustee of public schools I succeeded in having a resolution adopted urging the Commissioners of the District to draw a bill to be presented to Congress forbidding all dealers in tobacco to sell to minors. For some reason the Commissioners took no notice of the resolution. My reasons for having the board of school trustees take action was, I observed the pernicious habit of using tobacco in the form of cigarette smoking among boys was growing. I felt we owed it to the lads and to the community to make an effort to stop a practice that was attended with so much evil consequence to both.

Tobacco will produce a variety of disorders of a permanent character in the various organs of the body. Smoking will cause blood changes, giving it fluidity; it will cause debility of the stomach, debility and irregularity of the heart; it produces bronchial irritation, the base of the tongue is often affected, the vocal cords become impaired; the effect upon the eyes is often serious—the pupils become dilated, and the optic nerve partially or wholly paralyzed. Its deleterious effect upon the spinal cord at times is marked; the brain is frequently poorly nourished. This is largely the sequel to the debility tobacco produces of the stomach, and to the irregularity of the heart; this is why smokers have fainting spells and vertigo. Tobacco prevents in a great measure assimilation of food; in fact smokers can go for hours without eating.

To allow our youth to engage unrestrictedly in a practice that will produce the

conditions I have mentioned (and I have not mentioned half) is to permit that which will produce a race of imbeciles.

Louis Napoleon saw the effect smoking was having upon the lads of France, and issued an edict forbidding the sale of tobacco to minors.

Trusting your efforts to have a law regulating the sales of it in this District will be successful,

I remain yours truly,

Mrs. EMMA F. SHELTON.

C. B. PURVIS,

THE CATHOLIC UNIVERSITY OF AMERICA,
Washington, D. C., January 5, 1891.

Since the public seem convinced that the use of tobacco by minors is a pernicious evil, and that the practice can be reached and stopped only by the aid of legislation, I unite with the large number of physicians, and others competent to judge in the matter, in petitioning for the passage of the bill to that effect now before Congress.

JOHN J. KEANE.

HOWARD UNIVERSITY,
Washington, D. C., July 6, 1891.

This University has always occupied a pronounced position against the use of tobacco among its students, and I believe I voice the sentiment of all its faculties as well as its board of trustees in giving my hearty indorsement to the bill prohibiting the sale of tobacco to minors under sixteen, and its use by them.

J. E. RANKIN,
President.

S. 4560.—A bill to prohibit the sale of tobacco to, or its use by, minors under sixteen years of age in the District of Columbia.]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That hereafter no person in the District of Columbia shall sell, give, or furnish any cigar, cigarette, or tobacco in any of its forms to any minor under sixteen years of age; and for each and every violation of this section the offender shall, on conviction, be fined not less than two dollars nor more than ten dollars, or be imprisoned for not less than five days nor more than twenty days.

SEC. 2. That no minor under sixteen years of age shall smoke or in any way use any cigar, cigarette, or tobacco in any form in any street, avenue, alley, or other public place or resort within the District of Columbia; and each and every violation of this section shall be punishable by a fine of not less than two dollars nor more than five dollars.

We most respectfully and urgently petition the Congress to pass at once the above bill, so necessary to the protection of the health and morals of the young of the District of Columbia.

Tennis S. Hamlin, G. B. Patch, B. F. Bittinger, W. A. Bartlett, Chas. B. Ramsdell, M. N. Cornelius, Joseph T. Kelly, John Chester, J. L. French, T. S. Wynkoop, James E. Fitch, Robert C. Fox, C. J. Bell, William Fitch, Wm. Ballantyne, W. W. Flemming, S. V. Carter, Edmond R. Colhoun, Alfred R. Quaiffe.

ST. MATTHEW'S CHURCH,
Washington, D. C., January 6, 1891.

Being thoroughly convinced that the habit of smoking is pernicious, particularly in the case of minors, I would be glad to see suitable legislation enacted that would help sensible parents in their efforts to preserve their sons from a practice which is noxious to mind and body.

P. L. CHAPPELLE, D. D.,
Rector St. Matthews.

GEORGETOWN COLLEGE,
West Washington, D. C., January 6, 1891.

DEAR MADAM: I fully approve of the purpose and method of the bill introduced into the Senate by Senator Edmunds, to prohibit the sale of tobacco to children under sixteen years of age and its use by such minors in public places. In the form of cigarettes, especially, tobacco is unquestionably an active poison, and any judicious plan for regulating or prohibiting its use by those whose constitution is not yet sufficiently strong to resist its deleterious effects will always have my hearty sympathy.

Very sincerely yours,

J. HAVENS RICHARDS, S. J.,
President.

Mrs. CHARLES W. SHELTON.

O

IN THE SENATE OF THE UNITED STATES.

JANUARY 10, 1891.—Presented, referred to the Committee on Privileges and Elections, and ordered to be printed.

COMMUNICATION FROM MESSRS. WM. H. CLAGETT AND J. R. DE LAMAR, TRANSMITTING A PROTEST SIGNED BY TWENTY-THREE MEMBERS OF THE LEGISLATURE OF IDAHO, AGAINST ALLOWING HON. FRED T. DUBOIS TO TAKE HIS SEAT IN THE SENATE.

To the honorable Senate of the United States:

We have the honor to transmit herewith a protest, signed by twenty-three members of the legislature of the State of Idaho, against allowing the Hon. Fred T. Dubois to take his seat in the Senate as a Senator from the State of Idaho, after March 4, 1891, on the ground that said Dubois was not elected to that high office. A brief statement of the facts and questions arising thereon, as shown by the duly certified copies of the journals of the two houses of the legislature, transmitted herewith, are occurrences of such a public nature that they have not up to the present time been disputed, and can not successfully be disputed, is as follows, viz:

On Monday, December 8, 1890, the legislature of the State of Idaho met pursuant to the proclamation of the governor, issued as required by section 14, article 21 of the constitution of the State.

On the first day of the session the house of representatives elected its speaker and principal officers, and on Tuesday, December 9, 1890, it completed the election of its officers, and thereafter and on that day *all* of its officers were sworn and entered upon their respective duties for the first time, and thereupon the house duly notified the senate of its organization.

On Monday, December 8, 1890, the senate took no steps toward electing its officers, but elected them all on December 9, 1890, and thereupon notified the house of representatives of its organization.

Thus it will be seen that the legislature was organized on Tuesday, the 9th of December, 1890.

On December 13 the following joint resolution passed the senate, viz:

Resolved by the senate, the house concurring, that the senate and house of representatives proceed to elect, as provided by law, United States Senators at the hour of 12 o'clock m., on Tuesday, the 16th day of December.

Which resolution was concurred in by the House of Representatives before the hour of 12 o'clock m., on Tuesday, December 16, 1890.

The law which *provided* for the election contemplated by the above resolution is found in section 14, article 21, of the State constitution, which directs the legislature "within *ten* days after its organization to elect, as *provided by law*, two Senators of the United States," and in section 20 of the act of Congress admitting Idaho into the Union, which provides that the "legislature of the State may elect two Senators of the United States as is provided by the constitution of the State."

Thus the legislature was charged by law with the duty of electing two United States Senators within *ten* days after its organization and to fulfill this duty the joint and concurrent resolution aforesaid required the election to be held within the *ten* days, viz, on Tuesday, December 16, 1890.

On Tuesday, December 16, 1890, the two houses, acting separately, voted for a United States Senator, without a choice being had.

On December 17, 1890, the two houses met in joint assembly, under the joint and concurrent resolution aforesaid, and took two ballots for a United States Senator, without a choice being had.

On the night of the 17th of December, 1890, a combination was formed by three of the candidates before the legislature, and by many of the supporters of such candidates *in* the legislature, by which it was agreed by such candidates and their respective supporters that three ballots should be taken the next day in the joint assembly and one of the three candidates in the combination elected on each ballot, the third election being to fill the vacancy which it was *assumed* would exist after March 4, 1891. Under this agreement, many members of the legislature, to secure the election of their first choice among the three candidates aforesaid, agreed to vote for one or more of the three to whose election they were violently opposed, in consideration of other members voting for their respective first-choice candidates, and thereby a majority of all the members of the legislature was obtained to carry out in the joint assembly the programme which had been arranged.

That this agreement among the members was a criminal act, section 6413 of the Revised Statutes of Idaho provides that—

Every member of either of the houses composing the legislature * * * who gives, or offers, or promises to give, any official vote in consideration that another member of the legislature shall give any such vote, either upon the same or another question, is guilty of felony.

After laying the foundation of the combination in an act declared a felony by the law of the State, it was necessary to resort to other illegal and revolutionary acts to make it successful, and accordingly when the joint assembly met again, on December 18, 1890, Senator Gunn offered therein the following resolution:

Resolved by the joint assembly of the senate and house of representatives of the legislature of the State of Idaho, That we proceed to elect two United States Senators to fill existing vacancies, and that after such election we immediately proceed to elect one United States Senator, to fill vacancy occurring March the 4th, 1891.

This resolution and the subsequent action taken thereunder were resisted by the members opposed to the illegal combination, but in spite of their efforts to the contrary the programme was carried out by the election of Hons. William J. McConnell and George L. Shoup to the Senate, and *immediately* thereafter, against the protest of members that an election at that time to fill an assumed vacancy on March 4, 1891, was illegal, the Hon. Fred T. Dubois was declared elected to fill such assumed vacancy.

Many things contribute to shield the members who entered into this combination from severe moral censure. Nearly all of them were inexperienced as legislators, and there are but two lawyers in the entire body, one of whom was relied upon by the members entering the combination to give them correct legal advice, and he is now a prominent candidate for appointment as United States district judge for Idaho.

So far as the election of Hon. Fred T. Dubois is concerned, it is submitted that in addition to the causes heretofore mentioned his alleged election is void for the reasons following, viz:

(1) Because it was unlawful for the legislature to elect any one to fill the vacancy assumed to exist after March 4, 1891, until after the two Senators elected as provided by the State constitution and the admission act had proceeded to Washington and drawn for terms, as the legislature could not know to a legal certainty until then that there would be such vacancy.

(2) That the legislature having met in joint assembly to elect two Senators to fill existing vacancies, it was a usurpation of power for the joint assembly (which was a special tribunal created by the joint and concurrent resolution of the two houses acting separately for a special purpose) to organize itself as a political convention for all purposes it might wish to accomplish, and thereby abolish the legislative functions and powers of the two houses to act separately as the law directs.

(3) That to carry out the programme secretly agreed upon it was necessary to elect Mr. Dubois *immediately* after the two Senators were elected, and that this haste made it impossible to discharge the important duty of electing a United States Senator with that deliberation which the United States Revised Statutes contemplate.

Fourth. That to carry out the programme it was necessary to dispense with the taking of a vote, to fill this *assumed* vacancy, by the two houses acting separately, as required by the United States Revised Statutes, and so this vote was dispensed with.

Fifth. That to carry out the programme it was necessary to vote to fill this assumed vacancy on the first instead of the second Tuesday after the organization of the legislature, and therefore the *time* provided by law for the election of a United States Senator was set aside.

Sixth. We further urge that it would be a grave misfortune to the State if one not elected should be permitted to take his seat in the Senate, and a misfortune almost as grave if a serious doubt should exist as to the title of one of Idaho's Senators to his seat.

Seventh. That the welfare of the State requires that the advice of the Senate should be taken as to the election of Mr. Dubois before the adjournment of the present session of the legislature, so that in case he shall be adjudged not entitled to his seat the State may be saved the expense of an extra session of the legislature to fill the vacancy (if there shall be a vacancy) after March 4, 1891.

All of which is respectfully submitted.

WM. H. CLAGETT.
J. R. DE LAMAR.

PROTEST AGAINST THE ELECTION OF THE HON. FRED T. DUBOIS TO THE SENATE OF THE UNITED STATES FOR THE STATE OF IDAHO.

We, the undersigned, members of the first session of the legislature of the State of Idaho, respectfully protest against the admission of the Hon. Fred T. Dubois to a seat in the Senate of the United States as Senator from the State of Idaho for the term beginning on the 4th day of March, 1891, on the ground that he has not been legally elected such Senator, and in support thereof we respectfully show :

(1) That the first session of the legislature of the State of Idaho was convened at the capitol of the State at 12 o'clock m. on Monday, the 8th day of December, 1890, by proclamation of the governor of the State.

(2) That the senate did not organize on Monday, December 8, 1890, and was not organized until Thursday, the 9th day of December, 1890, on which day for the first time it organized by the election of all its officers except the presiding officer who is designated by the constitution, and on that day sent notification of the fact of its organization to the other branch of the legislature and to the executive.

(3) That thereafter, on the 13th day of December, 1890, a concurrent resolution was passed by the senate to the effect that the respective houses of the legislature would proceed on Tuesday, the 16th day of December, to elect United States Senators, which resolution was concurred in by the house of representatives.

(4) That on Tuesday, December 16, being the first Tuesday after the organization of the legislature as above stated, each house of the legislature voted for the election of one United States Senator and adjourned.

On the next day, Wednesday, December 17, 1890, the two houses met in joint assembly, and the journals of each house being read, it was shown that no person had received a majority of the votes cast in either house, and the joint assembly then proceeded to vote for one Senator, and no person receiving a majority of the votes cast, the joint assembly adjourned to meet the next day.

(5) That the two houses of the legislature met for the second time in joint assembly on Thursday, the 18th day of December, 1890, and by resolution proceeded to elect two Senators to fill the existing vacancies for the State of Idaho, after which the joint assembly immediately proceeded, against the protest of members present, who objected thereto because the joint assembly had no legal right so to do until the second Tuesday after organization of the legislature (to elect a Senator for the term commencing on the 4th day of March, 1890), and the Hon. Fred T. Dubois was declared elected.

And your protestants respectfully show, that said pretended election was had before the second Tuesday after the organization of the senate, to wit, the 23d day of December, 1890.

That neither house of the legislature had voted for or named any person as Senator for said term, as required by Chapter I of Title 2 of the Revised Statutes of the United States, and the election of a Senator for said term, beginning March 4, 1891, had never been agreed to or considered favorably by either house of the legislature, but was first resolved upon in the joint assembly convened for the election of Senators to fill the existing vacancies, and was proceeded with against the protest and objection of members of the joint assembly, on the ground that such election at that time was not authorized by law.

Your protestants therefore pray that the Hon. Fred T. Dubois be not admitted to a seat in the Senate of the United States as a Senator for the State of Idaho.

JOHN S. GRAY,
President pro tempore of the Senate.

J. R. DE LAMAR.
J. S. LANGRISHE.
JOHN HANLY.
GEO. W. EMERY.
JAMES F. CAMERON.
A. L. SCOFIELD.
CAREY D. PORTER.
JOSEPH HAWKINS.
JAMES M. BALLENTINE.
FRANK STEUNENBERG.
H. ARMSTRONG.
H. M. CASEY.
J. Q. DRYDEN.
W. H. SMITH.
J. C. MARTIN.
E. S. JEWELL.
ISAAC IRWIN.
E. W. JONES.
STEPHEN DEMPSEY.
GREENE WHITE.
IRA S. SPERRY.
WM. WING.

MONDAY—FIRST DAY.

HOUSE OF REPRESENTATIVES,
Boise City, Idaho, Dec. 8, 1890.

In pursuance of the proclamation of the governor of Idaho, the house was called to order by Hon. H. J. Burkhart, speaker of the house of representatives of Fifteenth legislative assembly of the Territory of Idaho at the hour of 12 o'clock m.

Chas. H. Reed, chief clerk of the house of representatives of the Fifteenth session of the legislative assembly of the Territory of Idaho, acting the chief clerk of the house, then read the following proclamation:

STATE OF IDAHO.

PROCLAMATION CONVENING THE STATE LEGISLATURE.

Whereas Idaho was admitted into the Union of States on the 3d day of July, 1890, under a constitution previously prepared and adopted by a constitutional convention of the citizens of the Territory of Idaho, and ratified at an election held on November 5th, 1889; and

Whereas it is provided in the said constitution of the state of Idaho "that the governor of the State, immediately upon his qualifying and entering upon the duties of his office, shall issue his proclamation convening the legislature of the state on a day to be named in said proclamation:"

Now, therefore, in pursuance of the foregoing provisions and by authority vested in me as governor under the constitution of the State, I do hereby issue this my proclamation, designating Monday, the 8th day of December, 1890, as the day upon

which the legislature of the State of Idaho shall convene, and the members-elect to said legislature are hereby requested to assemble at Boise City, the capital of the State, at 12 o'clock meridian on the day above named (December 8th, 1890), and proceed to organize the legislature, as provided by the constitution and laws now in force.

In testimony whereof I have hereunto set my hand and caused the great seal of the State to be affixed. Done at the city of Boise, the capital of Idaho, this 3d day of November, in the year of our Lord one thousand eight hundred and ninety, and of the Independence of the United States of America the one hundred and fifteenth.

[SEAL.]

GEO. L. SHOUP,
Governor of Idaho.

By the Governor:

E. J. CURTIS,
Secretary of State.

The following certificate of the Secretary of State was then read:

DEPARTMENT OF STATE.

Secretary's Office, Idaho, Boise City, Dec. 8th, 1890.

The board of canvassers created by sec. 10, article 21, Constitution of the State of Idaho, have declared the following named gentlemen to have been elected members of the house of representatives of the first session of the legislature of the State of Idaho.

Ada County: W. H. Smith, Frank Steunenberg, J. M. Ballentine.

Alturas.—Lyttleton Price, George E. Mills.

Bingham.—B. J. Briggs, E. S. Merrell, R. A. Caldwell.

Bear Lake.—James Lyons.

Boise.—B. H. Smith, E. W. Jones.

Cassia.—F. C. Ramsey.

Custer.—George W. Emery, S. A. Swanger.

Elmore.—Martin King.

Idaho.—Frank A. Fenn.

Latah.—K. O. Skattaboe, J. C. Martin.

Kootenai.—U. M. Casey.

Lemhi.—Thos. Pyeatt, Eli Snyder.

Logan.—Henry Armstrong, Jno. G. Dryden.

Nez Perces.—T. S. Sperry.

Owyhee.—Joseph Hawkins.

Oneida.—Peter Frederickson.

Shoshone.—J. F. Cameron, C. D. Porter, A. L. Scofield, Jno. Hanley.

Washington.—C. M. Hixon, Chas. Irwin.

Ada and Elmore.—D. B. Ethell.

Alturas, Logan, and Bingham.—D. R. Munroe.

Idaho and Nez Perces.—J. D. Goodnight.

Latah and Kootenai.—A. J. Green.

I, A. J. Pinkham, secretary of the State of Idaho, do hereby certify that the foregoing is a full, true, and correct list of the members of the house of representatives, elected to represent the several counties in the State in the first session of the legislature of the State of Idaho, as the same have been returned by the several county canvassing boards, and now appear on file in the secretary's office.

In testimony whereof, I have hereunto set my hand and affixed the great seal of the State. Done at Boise City, the capital of Idaho, this 8th day of December, A. D. 1890.

[SEAL.]

A. J. PINKHAM,
Secretary of State.

The roll of members, as they appear upon the certificate of the secretary of State, was called, all being present.

The oath of office was then administered to the members of the house by Hon. John T. Morgan, associate justice of the supreme court of Idaho.

Prayer by Rev. L. W. Gowen.

The election of a speaker being declared in order, Mr. Emery, of Custer County, placed in nomination Mr. Fenn, of Idaho County.

Mr. Jones, of Boise County, placed in nomination Mr. Ballentine, of Ada County

A ballot was then taken, which resulted as follows :

Mr. Fenn	29
Mr. Ballentine	5
Mr. Emery	1
Mr. Stennenberg	1

The chair appointed Messrs. Price, Armstrong, and Cameron a committee to escort Mr. Fenn to the chair.

The committee presented Mr. Fenn, who was introduced to the house by Mr. Burkhart as the speaker of the house.

The oath of office was then administered to the speaker by Judge Morgan.

The speaker declared the next business in order to be the election of a chief clerk

Mr. Pyeatt of Lemhi County, nominated Chas. H. Reed, of Ada County, and Mr. Hawkins of Owyhee, nominated E. B. Lemon, of Alturas County.

A ballot was then taken which resulted as follows:

Mr. Reed	18
Mr. Lemon	11
Mr. Wickersham	5
Mr. Gray	1

Mr. Reed was declared duly elected chief clerk of the house for the ensuing session.

On motion of Mr. Armstrong the house took a recess for an hour.

AFTERNOON SESSION.

House called to order at 2 o'clock p. m.

Mr. Speaker in the chair.

Absent: Messrs. Jones, Lyon, Martin, Porter, and W. H. Smith.

On motion of Mr. Emery it was ordered that the election of all the attachés of the house be made by ballot.

The speaker appointed Messrs. King of Elmore County, and Green, of Latah and Kootenai County, as tellers.

The election of a sergeant-at-arms being declared in order, Mr. Briggs placed in nomination P. L. Hughes, of Bingham County, and Mr. Green nominated John Hunter.

A ballot was taken which resulted as follows:

Hughes	17
Hunter	19
Total	36

and Mr. Hunter was declared elected.

On motion of Mr. Monroe the house proceeded to the election of an assistant chief clerk, and nominations were made as follows :

Frank Riblett, by Mr. Ramsey.

Carrie Sweet, by Mr. Monroe.

Anna Black, by Mr. W. H. Smith.

Mr. Smith withdrew the name of Anna Black and a ballot was taken, which resulted as follows:

Mr. Ribbett	12
Miss Sweet	17
Miss Black	6
Total	35

There being no choice, another ballot was taken with the following result :

Mr. Ribbett.....	9
Miss Sweet.....	26
Total	35

and Miss Sweet was declared elected.

The election of a doorkeeper was then taken up and the following nominations made :

J. W. Jackson, by Mr. Lyon.

J. H. Wallace, by Mr. W. H. Smith.

T. T. Huntington, by Mr. Mills.

A ballot was then taken, which resulted as follows :

Mr. Jackson	14
Mr. Wallace.....	7
Mr. Huntington.....	10
Mr. Hunter.....	3
Mr. Larabee	1
Blank	1
Total.....	36

There being no choice, a second ballot was taken, which resulted as follows :

Jackson	20
Wallace	6
Huntington.....	9
Larabee	1
Total.....	36

and Mr. Jackson was declared duly elected.

On motion of Mr. Hawkins the house adjourned until 10 a. m., tomorrow, Dec. 9, 1890.

F. A. FENN,
Speaker.

Attest:

CHAS. H. REED,
Chief Clerk.

(NOTE.—The proceedings relating to the election of subofficers omitted.)

TUESDAY—SECOND DAY.

HOUSE OF REPRESENTATIVES,
Boise City, Idaho, Dec. 9th, 1890.

House met pursuant to adjournment.

Mr. Speaker in the chair.

Roll called.

Absent: Messrs. Ballentine, Caldwell, Ethel, Lyon, Pyeatt, Ramsey.

Prayer by chaplain.

Journal of yesterday read, corrected, and approved.

There being no objection the speaker declared the election of officers now in order.

Mr. Armstrong then nominated Rev. J. H. Barton for chaplain. Mr. Steunenberg moved that the election be made by acclamation.

Motion prevailed, and Rev. J. H. Barton was declared duly elected.

* * * * *

On motion of Mr. Steunenberg the attachés elect of the house, Miss Hunt excepted, were brought forward and the oath of office administered.

On motion of Mr. Jones, the chief clerk was directed to notify the council that the house was permanently organized and ready to proceed to the transaction of legislative business.

* * * * *

MESSAGE FROM THE SENATE.

[First session.]

STATE OF IDAHO, SENATE CHAMBER,
Boise City, Dec. 9, 1890.

Mr. SPEAKER: I am instructed to inform your honorable body that the Senate has permanently organized by the election of the following officers and attaches:

Secretary of the senate, M. C. Athey.
Ass't secretary, Robert Larimer.
Sergeant-at-arms, G. W. Hunter.
Doorkeeper, E. F. Calahan.
Engrossing clerk, S. B. Smith.
Ass't engrossing clerk, Miss Permeal French.
Enrolling clerk, Mark Leonard.
Ass't enrolling clerk, Miss Maggie Revey.
Pages, Sydney Fuld and W. W. Gasser.
Janitor, James Lawson.
Chaplain, Rev. L. W. Gowen.
And has proceeded to the transaction of legislative business.
Respectfully,

M. C. ATHEY,
Secretary.

Mr. Mills offered the following resolution, which was adopted:

Resolved, That a committee of three (3) members be appointed by the speaker, to join a like committee which may be appointed by the Senate, to wait upon his excellency the governor and inform him that the legislature is organized and now in session and ready to receive any communications he may be pleased to transmit.

The speaker appointed as such committee Messrs. Monroe, Porter, and Ballentine.

MESSAGE FROM THE SENATE.

SENATE CHAMBER,
Boise City, Dec. 9th, 1890.

By the senate.

Mr. SPEAKER: The senate has appointed Messrs. Wells, Finck, and Dempsay a committee to join the committee you have appointed to inform his excellency the governor of the organization of the first legislature of the State of Idaho, and that we are ready to receive any communication he may desire to make.

By order.

M. C. ATHEY,
Secretary.

* * * * *

On motion of Mr. Porter the house adjourned until 11 a. m. to-morrow.

F. A. FENN,
Speaker.

Attest:

CHAS. H. REED,
Chief Clerk.

FRIDAY, FIFTH DAY.

HOUSE OF REPRESENTATIVES,
Boise City, Idaho, Dec. 12th, 1890.

House called to order at 10 a. m.

Mr. Speaker in the chair.

Prayer by the chaplain.

Roll called.

Absent: Messrs. Briggs, Casey, Ethel, King, Lyons, Mills, Porter, Price, Ramsey, B. H. Smith, and Steunenberg.

Journal of yesterday read and approved.

MOTIONS AND RESOLUTIONS.

Mr. Porter offered the following resolution :

Resolved, That the house of representatives do now proceed to vote for a United States Senator for the State of Idaho, who is to hold the full term of six years, beginning with the Fifty-second Congress.

Mr. Hawkins offered the following substitute for Mr. Porter's resolution:

I respectfully move as an amendment that this house proceed on Tuesday next, the second Tuesday after the call of this legislature, to elect two Senators to represent this State in the Senate of the United States.

Mr. Price offered the following substitute for both resolution and substitute, which was declared out of order by the speaker :

Resolved, That the house of representatives, the senate concurring, proceed to-day to the election of two United States Senators for the State of Idaho, as provided in the constitution and the act of Congress admitting the State of Idaho into the Union.

Mr. Green moved to amend the substitute offered by Mr. Hawkins, by inserting after the word "proceed" in the second line the words "at 12 o'clock m." which amendment was accepted.

The question being upon the adoption of the substitute as amended, the ayes and nays were taken with the following result:

Ayes: Ballentine, Green, Hawkins, Irvine, Jones, Martin, Scattaboe, B. H. Smith, Sperry, Steunenberg. Total, 10.

Nays: Armstrong, Briggs, Caldwell, Cameron, Casey, Dryden, Emery, Ethel, Fredrickson, Goodnight, Hauley, Hixon, King, Lyons, Merrell, Mills, Monroe, Porter, Price, Pyeatt, Ramsey, Scofield, W. H. Smith, Suydam, Swauger, Mr. Speaker. Total, 26.

And so the substitute was rejected.

On the motion of Mr. Hanley the House took a recess until 2.30 p. m.

AFTERNOON SESSION.

House called to order at 2.30 p. m.

Mr. Speaker in the chair.

Roll called. All present.

There being no objection, Mr. Porter withdrew his resolution offered this morning.

* * * * *

On motion of Mr. Price the house then adjourned.

Attest:

CHAS. H. REED,
Chief Clerk.

F. A. FENN,
Speaker.

SATURDAY, SIXTH DAY.

HOUSE OF REPRESENTATIVES,
Boise City, Idaho, Dec. 13, 1890.

House called to order at 10 o'clock a. m.

Mr. Speaker in the chair.

Prayer by the chaplain.

Roll called.

Absent: Messrs. Briggs, Caldwell, Hanley, Jones, and Mills.

Journal of yesterday read and approved.

* * * * *

MESSAGE FROM THE SENATE.

OFFICE OF SECRETARY OF THE SENATE,
Boise City, Idaho, Dec. 13th, 1890.

Mr. SPEAKER: I am instructed to inform your honorable body that the senate has had under consideration and passed senate concurrent resolution No. 3, requiring the senate and house of representatives to proceed to elect United States Senators, as provided by law, at 12 o'clock m., on Tuesday, Dec. 16th, 1890.

And you are respectfully requested to concur.

Respectfully,

M. C. ATHEY,
Secretary.

* * * * *

MONDAY, EIGHTH DAY.

HOUSE OF REPRESENTATIVES,
Boise City, Idaho, December 15, 1890.

House called to order at 10 a. m.

Mr. Speaker in the chair.

Prayer by the chaplain.

Roll called.

Absent: Mr. Mills.

Journal of Saturday read and approved.

* * * * *

Senate concurrent resolution No. 3, by Gunn, requiring the senate and house of representatives to proceed to elect United States Senators, as provided by law, on Tuesday, December 16, 1890, at 12 o'clock m., was read first time.

* * * * *

TUESDAY, NINTH DAY.

HOUSE OF REPRESENTATIVES,
Boise City, Idaho, Dec. 16, 1890.

House called to order at 11.30 a. m.

Mr. Speaker in the chair.

Prayer by the chaplain.

Roll called.

Absent: Mr. Mills.

The speaker announced that Mr. Mills had been called home on account of sickness, and, there being no objection, he was granted indefinite leave of absence.

Journal of yesterday read and approved.

* * * * *

S. C. R. No. 3, requiring the senate and house to proceed to elect U. S. Senators, as provided by law, was read second time. Mr. Steunenberg moved that the rules be suspended and the resolution be read a third time and placed on its final passage.

Question being on suspension of rules, the ayes and nays were taken, with the following result:

Ayes: Armstrong, Ballentine, Briggs, Caldwell, Cameron, Casey, Dryden, Emery, Ethel, Frederickson, Goodnight, Green, Hanley, Hawkins, Hixon, Irvine, Jones, King, Lyons, Martin, Merrell, Monroe, Porter, Price, Pyeatt, Ramsey, Scattaboe, Scofield, Smith, W. H., Smith, B. H., Sperry, Steunenberg, Suydam, Swanger, and Mr. Speaker. Total, 35.

And so the rules were suspended and the resolution was read the third time.

Question being "Shall the resolution pass?"

The ayes and nays were taken with the following result:

Ayes: Armstrong, Ballentine, Briggs, Caldwell, Cameron, Casey, Dryden, Emery, Ethel, Frederickson, Goodnight, Green, Hanley, Hawkins, Hixon, Irvine, Jones, King, Lyons, Martin, Merrell, Monroe, Porter, Price, Pyeatt, Ramsey, Scattaboe, Scofield, Smith, W. H., Smith, B. H., Sperry, Steunenberg, Suydam, Swanger, and Mr. Speaker. Total, 35.

And so the resolution passed.

* * * * *

The hour of 12 o'clock m. having arrived, the speaker announced as the next in order the balloting for United States Senators, and directed the clerk to call the roll.

The roll being called, thirty-five votes were cast, of which

Wm. H. Clagett received 6.

Fred T. Dubois received 13.

Edward A. Stevenson received 6.

Wm. J. McConnell received 5.

Geo. L. Shoup received 5.

The members voting for Mr. Clagett were: Messrs. Armstrong, Cameron, Hanley, Porter, Scofield, and Sperry—6.

Those voting for Mr. Dubois were: Messrs. Briggs, Caldwell, Ethel, Frederickson, Goodnight, Hixon, King, Lyon, Merrell, Monroe, Price, Ramsey, and Mr. Speaker—13.

Those voting for Mr. Stevenson were: Messrs. Ballentine, Dryden, Irwin, Jones, Smith, B. H., and Steunenberg—6.

Those voting for Mr. McConnell were: Messrs. Casey, Green, Hawkins, Martin, and Scattaboe—5, and

Those voting for Mr. Shoup were: Messrs. Emery, Porter, Pyeatt, Smith, W. H., and Swanger—5.

Mr. Mills being absent.

And so the speaker announced that the house of representative has failed to give a majority of the whole number of votes cast to any person.

On motion of Mr. Emery, the house took a recess until 2.30 o'clock p. m.

* * * * *

On motion of Mr. Caldwell, the house adjourned.

F. A. FENN,
Speaker.

Attest:

CHAS. H. REED,
Chief Clerk.

WEDNESDAY, TENTH DAY.

HOUSE OF REPRESENTATIVES,
Boise City, Idaho, Dec. 17, 1890.

House called to order at 10 a. m.

Mr. Speaker in the chair.

Prayer by the chaplain.

Roll called.

Absent: Messrs. Caldwell, Casey, Hixon, Martin, Merrill, Mills, Porter, Ramsey, W. H. Smith, and Steunenberg.

Journal of yesterday read and approved.

* * * * *

MESSAGE FROM THE SENATE.

OFFICE OF THE SECRETARY OF THE SENATE,
Boise City, Idaho, Dec. 17, 1890.

MR. SPEAKER. I am instructed to inform your honorable body that the senate has had under consideration and passed senate concurrent resolution No. 5, providing that the lieutenant-governor shall preside during the joint session of the legislature.

Mr. Emery moved that the rules be suspended and the house proceed to consideration of S. C. R. No. 5.

Motion prevailed.

Mr. Price offered the following substitute for S. C. R. No. 5:

Resolved by the house of representatives (the senate concurring), That the speaker of the house preside at all joint assemblies of the senate and house during the present session.

The ayes and nays were called for and taken with the following result:

Ayes: Ballentine, Caldwell, Goodnight, Irvine, King, Monroe, Price, Steunenberg. Total, 8.

Nays: Armstrong, Briggs, Cameron, Casey, Dryden, Emery, Ethel, Fredrickson, Green, Hanley, Hawkins, Hixon, Jones, Lyons, Martin, Merrill, Porter, Pyeatt, Scattaboe, Schofield, W. H. Smith, B. H. Smith, Suydam, Swanger, Mr. Speaker. Total, 26.

And so the substitute was rejected.

On motion of Mr. Emery, S. C. R. No. 5 was then concurred in.

By unanimous consent Mr. Price offered the following resolution, which was adopted:

Resolved, That the chief clerk forthwith inform the Senate that the House is in session and ready to receive the Senate in joint assembly for the purpose of balloting for the election of a United States Senator.

The sergeant-at-arms announced the members of the senate and its officers in waiting, and, by direction of the speaker, were admitted to the house.

JOINT SESSION.

The joint session of the two houses was called to order by the lieutenant-governor, the president of the senate.

The roll of the senate was then called by the secretary of the senate; all present.

The chief clerk then called the roll of the house; all present, except Mr. Mills; excused.

The president then read from the Revised Statutes of the United States that portion relating to the election of United States Senators.

The secretary of the senate read from the journal that portion of the proceedings of yesterday relating to the ballot taken for United States Senators, and the chief clerk of the house read from the journal of the house yesterday that portion relating to the ballot for United States Senators.

It appearing therefrom that the same person has not received a majority of all the votes in each house, the president directed that the joint assembly proceed to choose, by a *viva voce* vote of each member present, a Senator.

The rolls of the respective houses were then called with the following result:

Total number of votes cast were 53, of which William J. McConnell received 9, William H. Clagett received 8, Geo. L. Shoup received 9, Fred T. Dubois received 17, Alexander E. Mayhew received 3, Edward A. Stevenson received 7.

Those voting for Mr. McConnell were Messrs. Brigham, De Lamar, Gunn, Wells, and Wing, of the Senate, and Messrs. Casey, Green, Martin, and Scattaboe, of the House—9.

Those voting for Mr. Clagett were Messrs. Finch and Langrishe, of the Senate, and Messrs. Armstrong, Cameron, Hauley, Porter, Scofield, and Sperry, of the House—8.

Those voting for Mr. Shoup were Messrs. Gray, McPherson, and Shoup, of the Senate, and Messrs. Emery, Hawkins, Pyeatt, W. H. Smith, Suydam, Swanger, of the House—9.

Those voting for Mr. Dubois were Messrs. Rodgers, Smith, Underwood, and Weiler, of the Senate, and Messrs. Briggs, Caldwell, Ethel, Frederickson, Goodnight, Hixson, King, Lyon, Merrill, Monroe, Price, Ramsey, and Mr. Speaker—17.

Those voting for Mr. Stevenson were Messrs. Branstetter, Dempsey, Jewell, and White, of the Senate, and Messrs. Irwin, Jones, and B. H. Smith, of the House—7.

And those voting for Mr. Mayhew were Messrs. Ballentine, Dryden, and Steunenberg of the House—3.

Absent, Mr. Mills, of the House.

No person having received a majority of all the votes cast, Mr. Wells moved that a second vote be taken; which motion prevailed.

SECOND BALLOT.

The rolls of the respective houses were then called, with the following result:

Total number of votes cast, 53; of which William J. McConnell received 5, Fred T. Dubois received 17, William H. Clagett received 8, Geo. L. Shoup received 13, Alexander E. Mayhew received 5, and Edward A. Stevenson received 5.

Those who voted for Mr. McConnell were Mr. Brigham, of the Senate, and Messrs. Casey, Green, Martin, and Scattaboe, of the House—5.

Those who voted for Mr. Dubois were Messrs. Rodgers, Smith, Underwood, and Weiler, of the Senate, and Messrs. Briggs, Caldwell, Ethel, Fredrickson, Goodnight, Hixson, King, Lyon, Merrell, Monroe, Price, Ramsey, and Mr. Speaker, of the House—17.

Those voting for Mr. Clagett were Messrs. Finch and Langrishe, of the Senate, and Messrs. Armstrong, Cameron, Hanley, Porter, Scofield, and Sperry, of the House—8.

Those voting for Mr. Shoup were Messrs. De Lamar, Gray, Gunn, McPherson, Shoup, Wells, and Wing, of the Senate, and Messrs. Emery,

Hawkins, Pyeatt, W. H. Smith, Suydam, Swanger, of the House—13.

Those voting for Mr. Mayhew were Messrs. Ballentine, Dryden, Irwin, Jones, and Steunenberg, of the House—5.

Those voting for Mr. Stevenson were Messrs. Branstetter, Dempsey, Jewell, and White, of the Senate, and Mr. B. H. Smith, of the House—5.

No person having received a majority of all the votes cast, the President declared there was no election.

On motion of Mr Gray, of the senate, the joint assembly adjourned.

* * * * *

THURSDAY.—ELEVENTH DAY.

HOUSE OF REPRESENTATIVES,

Boisé City, Idaho, December 18, 1890.

House called to order at 11.30 a. m.

Mr. Speaker in the chair.

Prayer by the chaplain.

Roll called.

Absent, Messrs. Cameron and Porter.

Journal of yesterday read and approved.

* * * * *

The Sergeant-at-Arms announced the members of the Senate and its officers in waiting, and by direction of the Speaker were admitted to the House.

JOINT SESSION.

The joint session of the two houses was called to order by the Lieutenant-Governor, the president of the Senate.

The roll of the Senate then called by the secretary of the Senate.

All present.

The Chief Clerk then called the roll of the House.

All present.

The Chief Clerk of the House read from the journal of the House of yesterday that portion relating to the joint assembly, which was approved.

Senator Gunn offered the following resolution :

Resolved, By the joint assembly of the Senate and House of Representatives of the Legislature of the State of Idaho, That we proceed to elect two United States Senators to fill existing vacancies, and that after such elections we immediately proceed to elect one United States Senator to fill vacancy occurring March the 4th, 1891.

Senator Gray then offered the following amendment :

I move to amend the resolution to read as follows : That we do now proceed to elect one Senator from North Idaho, and then proceed to elect one Senator from South Idaho to fill vacancies now existing.

Senator raised the point of order that the amendment was not in order, which was sustained by the Chair.

Senator Gray then withdrew his amendment and offered the following as a substitute for the original resolution :

I move that the resolution read as follows : That we proceed to elect two Senators to fill the vacancies now existing.

The question being on the adoption of the substitute the ayes and nays were called for and taken with the following result :

SENATE ROLL CALL.

Ayes: Branstetter, De Lamar, Dempsey, Finch, Gray, Jewell, Langrische, White; total, 8.

Nays: Brigham, Gunn, McPherson, Rogers, Shoup, Smith, Underwood, Weiler, Wells, Wing; total, 10.

HOUSE ROLL CALL.

Ayes: Armstrong, Ballentine, Cameron, Casey, Dryden, Emory, Hanley, Hawkins, Irwin, Jones, Martin, Porter, Scofield, Smith, W. H., Smith, B. H. Sperry, Steunenberg; total 17.

Nays: Briggs, Caldwell, Ethel, Fenn, Frederickson, Goodnight, Green, Hixon, King, Lyons, Merrell, Mills, Monroe, Price, Pyeatt, Ramsey, Scattaboe, Suydam, and Swanger; total 19.

Total ayes in all, 25.

Total nays in all, 29.

And so the substitute was rejected.

The question recurring on the original resolution, the ayes and nays were taken with the following result:

ROLL CALL OF SENATE.

Ayes: Brigham, Gunn, McPherson, Rogers, Shoup, Smith, Underwood, Weiler, Wells, Wing; total 10.

Nays: Branstetter, De Lamar, Dempsey, Finch, Gray, Jewell, Langrische, White; total 8.

ROLL CALL OF HOUSE.

Ayes: Briggs, Caldwell, Ethel, Fenn, Frederickson, Goodnight, Green, Hixon, King, Lyons, Merrell, Mills, Monroe, Price, Pyeatt, Ramsey, Scattaboe, Suydam, Swanger; total 19.

Nays: Armstrong, Ballentine, Cameron, Casey, Dryden, Emery, Hanley, Hawkins, Irwin, Jones, Martin, Porter, Scofield, Smith, W. H., Smith, B. H., Sperry, Steunenberg; total 17.

Total ayes in all, 29.

Total nays in all, 25.

And so the resolution was adopted.

The president directed that the joint assembly proceed to the election of a United States Senator to fill an existing vacancy by a *viva voce* vote of each member present.

The rolls of the respective houses were then called, with the following result:

Total number of votes, 54: of which George L. Shoup received 31, William H. Clagett received 12, Alexander E. Mayhew received 10, W. J. McConnell received 1.

Those voting for George L. Shoup were—Messrs. Brigham, Gunn, McPherson, Rogers, Shoup, Smith, Underwood, Weiler, and Wells, of the senators; and Messrs. Briggs, Caldwell, Emery, Ethel, Fenn, Frederickson, Goodnight, Green, Hixon, King, Lyon, Martin, Merrell, Mills, Monroe, Price, Pyeatt, Ramsey, Scattaboe, Smith, W. A., Suydam, and Swanger, of the house—31.

Those voting for William H. Clagett were—Messrs. De Lamar, Finch, Gray, and Langrische, of the senate; and Messrs. Armstrong, Cameron, Casey, Hanley, Hawkins, Porter, Scofield, and Sperry, of the house—12.

Those voting for Alexander E. Mayhew were—Messrs. Branstetter, Dempsay, Jewell, and White, of the senate; and Messrs: Ballentine, Dryden, Irwin, Jones, Smith, B. H., and Steunenberg, of the house—10.

Mr. Wing of the senate voting for William H. McConnell.

George L. Shoup, having received a majority of all the votes cast, was declared duly elected United States Senator.

Mr. Emery moved to adjourn, upon which the yeas and nays were called and taken, with the following result:

ROLL CALL OF SENATE.

Ayes: Branstetter, De Lamar, Dempsay, Finch, Gray, Jewell, Langrische, White; total, 8.

Nays: Brigham, Gunn, McPherson, Rogers, Shoup, Smith, Underwood, Weiler, Wells, Wing; total, 10.

ROLL CALL OF HOUSE.

Ayes: Armstrong, Ballentine, Cameron, Casey, Dryden, Emery, Hanley, Hawkins, Jones, King, Porter, Scofield, Smith, W. H., Smith, B. H., and Steunenberg; total, 15.

Nays: Briggs, Caldwell, Ethel, Frederickson, Goodnight, Green, Hixon, Lyons, Martin, Merrell, Mills, Monroe, Price, Pyeatt, Ramsey, Scattaboe, Sperry, Suydam, Swanger, Mr. Speaker; total, 20.

Ayes in all, 23.

Nays in all, 30.

And so the motion to adjourn was lost.

The joint assembly then proceeded to the election of a United States Senator to fill the other existing vacancy.

SECOND BALLOT.

The rolls of the respective houses were then called with the following results:

Total number of votes cast, 54; of which W. J. McConnell received 29, Wm. H. Clagett received 15, and Geo. Ainslie received 10.

Those voting for W. J. McConnell were—Messrs. Brigham, Gunn, McPherson, Rogers, Shoup, Smith, Underwood, Weiler, Wells, and Wing, of the senate; and Messrs. Briggs, Caldwell, Ethel, Fenn, Frederickson, Goodnight, Green, Hixon, Lyon, Martin, Merrell, Mills, Monroe, Price, Pyeatt, Ramsey, Scattaboe, Suydam, and Swanger, of the house—29.

Those voting for W. H. Clagett were—Messrs. De Lamar, Finch, Gray, Langrische, of the senate; and Messrs. Armstrong, Cameron, Casey, Emery, Hanley, Hawkins, King, Porter, Scofield, Smith, W. H., and Sperry, of the house—15.

Those voting for Mr. Ainslie were—Messrs. Branstetter, Dempsay, Jewell, and White, of the senate; and Messrs. Ballentine, Dryden, Irwin, Jones, Smith, B. H., and Steunenberg, of the house—10.

Mr. McConnell having received a majority of all the votes cast was declared duly elected United States Senator.

Senator Gray moved to adjourn, upon which the ayes and nays were called for and taken, with the following result:

ROLL CALL OF SENATE.

Ayes: Branstetter, De Lamar, Dempsay, Finch, Gray, Jewell, Langrische, White, and Wing; total, 9.

Nays: Brigham, Gunn, McPherson, Rogers, Shoup, Smith, Underwood, Weiler, Wells; total, 9.

HOUSE ROLL CALL.

Ayes: Armstrong, Ballentine, Cameron, Casey, Dryden, Emery, Hanley, Hawkins, Irvine, Jones, Porter, Scofield, Smith, W. H., Smith, B. H., Sperry, Steunenberg; total, 16.

Nays: Briggs, Caldwell, Ethel, Fenn, Frederickson, Goodnight, Green, Hixon, King, Lyons, Martin, Merrell, Mills, Monroe, Price, Pyeatt, Ramsey, Scattaboe, Suydam, and Swanger; total, 20.

Total of all ayes, 25.

Total of all nays, 29.

And so the motion to adjourn was lost.

The joint assembly then proceeded to the election of a United States Senator whose term should begin March 1, 1891.

By request of Senator Gray his objection to the election of a third United States Senator is entered on the journal.

THIRD BALLOT.

The rolls of the respective houses were called with the following result:

Total number of votes cast 54; of which Fred T. Dubois received 32, Wm. H. Clagett received 12, and John Haley received 10.

Those voting for Mr. Dubois were—Messrs. Brigham, Gunn, McPherson, Rogers, Shoup, Smith, Underwood, Weiler, Wells, and Wing, of the Senate; and Messrs. Briggs, Caldwell, Casey, Ethel, Fenn, Frederickson, Goodnight, Green, Hixon, King, Lyons, Martin, Merrell, Mills, Monroe, Price, Pyeatt, Ramsey, Scattaboe, Sperry, Suydam, and Swanger of the House—32.

Those voting for Wm. H. Clagett were—Messrs. De Lamar, Finch, Gray, and Langrische, of the Senate; and Messrs. Armstrong, Cameron, Emery, Hanley, Hawkins, Porter, Scofield, Smith, W. H., of the House—12.

Those voting for Mr. Haley were—Messrs. Branstetter, Dempsey, Jewell, and White, of the Senate; and Messrs. Ballentine, Dryden, Irwin, Jones, Smith, B. H., and Steunenberg, of the House—10.

Mr. Dubois having received a majority of all the votes cast was declared duly elected U. S. Senator for the term commencing March 1, 1891.

On motion of Mr. Wells, the joint assembly dissolved.

HOUSE IN SESSION.

Mr. Speaker in the chair.

On motion of Mr. Green, the house adjourned.

F. A. FENN,
Speaker.

Attest:

CHAS. H. REED,
Chief Clerk.

FRIDAY—TWELFTH DAY.

HOUSE OF REPRESENTATIVES,
Boise City, Idaho, Dec. 19th, 1890.

House called to order at 10 a. m.

Mr. Speaker in the chair.

Prayer by the chaplain.

Roll called. Absent, Mr. Casey.

Journal of yesterday read.

Mr. Ballentine moved the following amendment to the journal:

Mr. Gray objected to the balloting for United States Senator for the term commencing March 4th, 1891, and ending March 3d, 1897, upon the ground—

1st. That such procedure was in violation of the resolutions of the separate houses, that they proceed to the election of two United States Senators to fill the existing vacancies.

2nd. That the proposed voting for United States Senator for the long term was unconstitutional and illegal, and not in accordance with the Federal statutes relating thereto. That no voting or action had been taken in either house or resolution passed by them prior to the action taken by the joint convention for said election.

Question being, Shall the amendment be adopted? the ayes and nays were taken with the following result:

Those voting aye, were Messrs. Armstrong, Ballentine, Cameron, Emery, Dryden, Hawkins, Irvine, Martin, Porter, Settaboe, Schofield, Smith, B. H. Steunenburg—13.

Those voting in the negative, Messrs. Briggs, Caldwell, Casey, Ethel, Goodnight, Green, Hanley, Hixon, Jones, King, Lyon, Merrill, Mills, Monroe, Price, Pyeatt, Ramsey, Smith, W. H. Sperry, Suydam, Swanger, and Mr. Speaker—23.

And so the amendment was rejected and the journal approved.

FRANK A. FENN,
Speaker.

Attest:

CHARLES H. REED,
Chief Clerk.

UNITED STATES OF AMERICA,

Department of State, secretary's office, Idaho.

I, A. J. Pinkham, secretary of the State of Idaho, do hereby certify that the annexed are true and correct extracts from the journal of the house of representatives of the first session of the legislature convened at Boise City, December 8th, 1890, and now of record in this office.

In testimony whereof, I have hereunto set my hand and affixed the great seal of the State. Done at Boise City, the capital of Idaho, this 25th day of December, A. D., 1890.

A. J. PINKHAM,
Secretary of State.

[SEAL.]

Article IV, Sec. 15, of the constitution of the State of Idaho, provides:

"The seal of the Territory of Idaho as now used shall be the seal of the State until otherwise provided by law."

FIRST DAY.

SENATE CHAMBER,
Boise City, Idaho, Dec. 8th, 1890.

At the hour of 12 o'clock noon on Monday the 8th day of December, A. D. 1890, being the day and hour designated in the proclamation of the governor of the State convening the legislature of the State of Idaho for the first session, the members-elect of the Senate assembled in the Senate chamber of the capitol at Boise City, and were called to

order by Lieutenant-Governor Norman B. Willey, president of the Senate.

After prayer by the Rev. Mr. Skidmore, Mr. Gunn moved that M. C. Athey be elected secretary of the senate *pro tem*.

The president then read the proclamation of the governor convening the legislature of the State of Idaho at Boise City, Idaho, on the 8th day of December, 1890.

The president of the senate then called the roll of members as certified to by the secretary of state, and the following-named gentlemen responded to their names:

Ada County.—John S. Gray and H. C. Branstetter.

Alturas County.—James Gunn.

Bingham County.—George B. Rogers.

Boise County.—Stephen Dempsay.

Custer County.—James M. Shoup.

Elmore County.—Green White.

Latah County.—J. W. Brigham.

Lemhi County.—W. M. McPherson.

Logan County.—Edward C. Smith.

Shoshone County.—John A. Finch and J. S. Langrishe.

Washington County.—Edward S. Jewell.

Bear Lake, Bingham, and Oneida Counties.—J. L. Underwood.

Cassia and Owyhee.—J. R. DeLamar.

Idaho and Nes Perce.—I. S. Weiler.

Latah and Nes Perce.—William Wing.

Latah and Kootenai.—J. M. Wells.

The oath of office was then administered to the senators-elect by Mr. Justice Sullivan, chief justice of the supreme court of the State of Idaho.

Mr. Gray moved that the Senate adjourn until 2.30 o'clock p. m. of this day. The motion was carried.

* * * * *

Senate met pursuant to adjournment at 2.30 o'clock p. m., the lieutenant-governor presiding. Roll was called and all the senators were present.

Mr. Shoup moved that a committee of five be appointed by the chair to report rules for the government of the senate. The motion was carried.

Mr. Gray moved that the rules of the legislative council of the fifteenth session be adopted, so far as consistent, for the regulation of the senate until the report of the committee on rules be adopted. The motion was carried.

Mr. Brigham moved the president appoint a committee of three on organization to designate and determine the number and order of offices to be filled by the senate. The motion was carried. The president of the senate then announced the following committees:

Committee on rules of government of the Senate.—Messrs. Shoup, Weiler, Langrishe, Gray and Branstetter.

Committee on Organization.—Messrs. Brigham, Gunn and Jewell.

* * * * *

Mr. Wells moved that the senate adjourn until to-morrow at 10 o'clock a. m.

Which motion prevailed, and the senate adjourned.

N. B. WILLEY,
President of the Senate.

Attest:
M. C. ATHEY,
Secretary.

SECOND DAY.

SENATE CHAMBER,
Boise City, December 9th, 1890.

Senate met pursuant to adjournment at 10 o'clock a. m.

Senate was opened by prayer by Rev. Mr. Gowan.

Roll called. All present.

Committee on organization made the following report:

Mr. PRESIDENT: We, your committee on organization, appointed to designate and determine the number and order of the offices to be filled by the senate ask leave to report, as follows:

- 1st. President *pro tempore* of the senate.
- 2d. Secretary of the senate.
- 3d. Assistant secretary of the senate.
- 4th. Engrossing clerk.
- 5th. Assistant engrossing clerk.
- 6th. Enrolling clerk.
- 7th. Assistant enrolling clerk.
- 8th. Sergeant-at-arms.
- 9th. Two pages.
- 10th. Door-keeper.
- 11th. Janitor.
- 12th. Chaplain.

Respectfully submitted.

J. W. BRIGHAM, *Chairman.*

Mr. Weiler moved that the report be adopted.

Which motion prevailed.

Mr. Wells moved that the senate do now proceed to the election of officers as designated in the report of the committee on organization.

Mr. Gray moved to amend by adding the words that the election be by ballot.

Mr. Wells accepted the amendment.

The motion prevailed.

The president of the senate appointed Messrs. Finch and Dempsay as tellers.

Mr. Finch placed in nomination Mr. M. C. Athey for secretary of the senate.

Mr. Gunn moved that the secretary cast the vote of the senate for M. C. Athey for secretary of the senate.

Which motion prevailed.

The president declared M. C. Athey duly elected secretary of the senate.

Mr. Weiler placed Mr. Robert Larimer in nomination for assistant secretary of the senate.

Mr. Finch moved that the secretary cast the vote of the senate for Mr. Robert Larimer for assistant secretary of the senate.

Mr. Weiler moved to amend by adding the words "that in all other cases where there is but one candidate for the office the same proceeding shall be had."

Mr. Finch accepted the amendment.

The motion prevailed.

The president declared Mr. Robert Larimer duly elected as assistant secretary of the senate.

Mr. Wells moved that the secretary cast the vote of the senate for Mr. S. B. Smith for engrossing clerk of the senate,

Which motion prevailed.

• • • • •

MESSAGE FROM THE HOUSE.

OFFICE OF CHIEF CLERK OF THE HOUSE OF REPRESENTATIVES,
Boise City, Idaho, Dec. 9th, 1890.

Mr. PRESIDENT: I am instructed to inform your honorable body that the house of representatives has permanently organized by the election of the following officers and attaches:

Speaker, Frank A. Fenn.

Chief clerk, Charles H. Reed.

Assistant chief clerk, Carrie Sweet.

Sergeant-at-arms, John Hunter.

Door-keeper, J. W. Jackson.

Enrolling clerk, W. L. Dunwoody.

Assistant enrolling clerk, Miss Florence Hunnt.

Messenger, Harry Stullworth.

Engrossing clerk, Miss Theresa O'Farell.

Page, John Tonkins.

Assistant engrossing clerk, Miss Anna Black.

Chaplain, Rev. J. H. Barton.

Messenger, Master Harry Shellworth.

and has proceeded to the transaction of legislative business.

Respectfully,

CHARLES H. REED,
Chief Clerk.

* * * * *
Mr. Smith moved that the secretary cast the vote of the senate for G. W. Hunter for sergeant-at-arms of the senate.

Which motion prevailed.

* * * * *
Mr. Gunn moved that the secretary cast the vote of the senate for E. F. Calahan for doorkeeper of the senate.

Which motion prevailed.

* * * * *
Mr. Brigham moved that the secretary cast the vote of the senate for Rev. Mr. Gowan for chaplain of the senate.

Which motion prevailed.

Mr. White moved that the officers and attachés of the senate be in the senate chamber at 2 o'clock this afternoon to take the oath of office.

Which motion prevailed.

Mr. Finch moved that the senate adjourn until 2 o'clock this afternoon.

Which motion prevailed.

AFTERNOON SESSION.

The senate resumed its session at 2 o'clock p. m.

The president in the chair.

Roll called. All present.

* * * * *
The oath of office was administered to the attachés of the senate by the president.

* * * * *
Mr. Gunn moved that the secretary proceed to the chamber of the house of representatives of the first legislative assembly of the State of Idaho and inform them that the senate is now organized and ready for the transaction business.

The motion prevailed.

* * * * *

Mr. Wells moved that a committee of two be appointed to act with a like committee of the house to wait upon his excellency the governor, to inform him that the legislature is now organized and ready to receive any communication he desires to make.

The motion prevailed.

The president appointed as such committee Messrs. Wells and Dempsey.

* * * * *

MESSAGE FROM THE HOUSE.

OFFICE OF CHIEF CLERK OF THE HOUSE OF REPRESENTATIVES,
Boise City, Idaho, Dec. 9th, 1890.

MR. PRESIDENT: I am instructed to inform your honorable body that the house of representatives has appointed Messrs. Monroe, Ballentine, and Porter, as a committee to act with a like committee from the senate, to wait upon his excellency, George L. Shoup, governor of Idaho, and inform him that the legislature of Idaho is organized and ready to receive any communication he may desire to make.

Respectfully,

CHARLES H. REED,
Chief Clerk.

Mr. Gunn moved that the secretary of the senate proceed to the house and announce that a committee consisting of three senators have been appointed by this body to act with a like committee from the house, and inform his excellency George L. Shoup that the legislative assembly is now organized and ready to receive any communication he may desire to make.

The motion prevailed.

Messrs. Wells, Dempsey, and Gunn, of the committee appointed to wait upon the governor, were excused.

* * * * *

On motion of Mr. De Lamar the Senate adjourned until ten o'clock a. m. to-morrow.

N. B. WILLEY,
President of the Senate.

Attest:

M. C. ATHEY,
Secretary.

FIFTH DAY.

BOISE, IDAHO, Dec. 12, 1890.

The senate met at ten o'clock a. m., pursuant to adjournment.

Mr. President in the chair.

Roll called.

All present except Mr. Wells.

Prayer by the chaplain.

Journal of yesterday was read and approved.

* * * * *

Mr. Underwood offered the following resolution:

Resolved, That both houses of the legislature meet, as provided by law, on Saturday, the 13th inst., at the hour of 11 o'clock a. m., and proceed to ballot for United States Senator.

MESSAGE FROM THE GOVERNOR.

* * * * *

After reading the message from the governor, the resolution offered by Mr. Underwood was taken up and considered.

Mr. Gunn offered the following substitute:

Resolved, by the senate, the house concurring, that the senate and house of representatives proceed to elect, as provided by law, United States Senators at the hour of 12 o'clock m., on Tuesday, the 16th day December, 1890.

Which was adopted.

And, on motion of Mr. Gunn, was referred to the committee on judiciary. * * *

On motion of Mr. Gray the senate adjourned until 10 o'clock to morrow.

N. B. WILLEY,
President of the Senate.

Attest:
M. C. ATHEY,
Secretary.

SIXTH DAY.

SENATE CHAMBER,
Boise City, Dec. 13, 1890.

The senate met at 10 o'clock a. m., pursuant to adjournment.

Mr. President in the chair.

Prayer by the chaplain.

Roll called.

All present except Messrs. Branstetter and Langrishe.

Journal of yesterday was read, corrected, and approved. * * *

Mr. Gray, from the committee on the judiciary, submitted the following report:

SENATE CHAMBER, *Dec. 13, 1890.*

Mr. PRESIDENT: The judiciary committee, to whom was referred senate concurrent resolution, No. 3, that the senate and house of representatives proceed to elect, as provided by law, United States Senators at the hour of 12 o'clock m., on Tuesday, Dec. 16, 1890, have had the same under consideration and respectfully report the same back, with the recommendation that it do pass.

GRAY, *Chairman.*

* * * * *

Senate concurrent resolution No. 3 was taken up and considered.

Mr. Gunn moved that the resolution be adopted.

Mr. Shoup moved that the resolution be indefinitely postponed.

Which motion, after discussion, was withdrawn and the motion to adopt was agreed to.

N. B. WILLEY,
President of the Senate.

Attest:
M. C. ATHEY,
Secretary.

NINTH DAY.

SENATE CHAMBER,
Boise, Dec. 16, 1890.

The senate met at 11.30 o'clock a. m., pursuant to adjournment.

Mr. President in the chair.

Prayer by the chaplain.

Roll called.

All present except Mr. De Lamar, who was excused.

Journal of yesterday was read, corrected, and approved.

* * * * *

At 12 o'clock meridian the president announced the business before the senate to be the consideration of the subject contained in senate concurrent resolution No. 3, to wit, the election of United States Senators.

After the reading of that portion of the United States Revised Statutes relating thereto, the senate proceeded to vote for United States Senator. Upon calling the roll, the vote stood as follows:

Those who voted for Fred T. Duboise, were Messrs. Rogers, Smith, Underwood, and Weiler—4.

Those who voted for George L. Shoup were Messrs. Gray, McPherson, and James M. Shoup—3.

Those who voted for W. J. McConnell were Messrs. Brigham, Gunn, Wells, and Wing—4.

Those who voted for Wm. H. Clagett were Messrs. Finch and Langrishe—2.

Those who voted for Mr. Ed. A. Stevenson were Messrs. Branstetter, Dempay, Jewell, and White—4.

Whole number of votes cast, 17. Necessary to a choice, 9.

The president announced that not a majority of all the senators elected having voted for United States Senator, therefore there has been no election.

Mr. Gunn moved that the senate do now proceed to elect a second United States Senator to fill existing vacancy.

Mr. Weiler moved that the senate take a recess until 2 o'clock p. m. Which motion prevailed.

Senate resumed its session at 2 o'clock p. m.

Mr. President in the chair.

Roll called.

All present except Messrs. De Lamar and Weiler.

* * * * *

MESSAGE FROM THE HOUSE.

OFFICE OF CHIEF CLERK OF HOUSE OF REPRESENTATIVES,
Boise City, Dec. 16, 1890.

MR. PRESIDENT: I am instructed to inform your honorable body that the house of representatives has had under consideration and passed senate concurrent resolution No. 3, requiring the senate and house of representatives to proceed to elect United States Senators as provided by law, which are herewith transmitted.

CHARLES H. REED,
Chief Clerk.

At 4.30 o'clock p. m., on motion of Mr. Gunn, the senate adjourned until 10 o'clock a. m. to-morrow.

N. B. WILLEY,
President of the Senate.

Attest:

M. C. ATHEY,
Secretary.

TENTH DAY.

SENATE CHAMBER,
Boise, Idaho, Dec. 17th, 1890.

The senate met at 11 o'clock a. m., pursuant to adjournment.

Mr. President in the chair.

Prayer by the chaplain.

Roll called.

All present except Messrs. Finch and Smith.

Journal of yesterday read and approved.

* * * * *

Mr. Shoup introduced the following senate concurrent resolution, and moved its adoption:

Resolved by the Senate, the house of representatives concurring, That until otherwise provided the lieutenant governor shall preside at all joint conventions of the two branches of the legislature.

Which was agreed to.

MESSAGE FROM THE HOUSE.

OFFICE OF CHIEF CLERK OF THE HOUSE OF REPRESENTATIVES,
Boise City, Idaho, Dec. 17th, 1890.

Mr. PRESIDENT: I am instructed to inform your honorable body that the house of representatives has had under consideration and adopted senate concurrent resolution No. 5, providing that the lieutenant governor shall preside during joint sessions of the senate and house of representatives, which is herewith transmitted.

CHARLES H. REED,
Chief Clerk.

MESSAGE FROM THE HOUSE.

OFFICE OF CHIEF CLERK OF THE HOUSE OF REPRESENTATIVES,
Boise City, Idaho, Dec. 17th, 1890.

Mr. PRESIDENT: I am instructed to inform your honorable body that the house of representatives is now in session and ready to receive the senate in joint session for the purpose of balloting for the election of a United States Senator.

Respectfully,

CHARLES H. REED,
Chief Clerk.

The senate proceeded to the hall of the house of representatives.

After the adjournment of the joint session the senate reassembled in the senate chamber.

Mr. President in the chair.

And at 12.45 o'clock p. m., on motion of Mr. Weiler, the senate took a recess until 2.30 o'clock p. m.

* * * * *

At 4.30 o'clock, on motion of Mr. Gray, the senate adjourned until 11 o'clock a. m. to-morrow.

Attest:

M. C. ATHEY,
Secretary.

N. B. WILLEY,
President of the Senate.

ELEVENTH DAY.

SENATE CHAMBER,
Boise City, Dec. 18th, 1890.

The Senate met at 11 o'clock a. m. pursuant to adjournment.

Mr. President in the chair.

Prayer by the chaplain.

Roll called.

All present except Messrs. Branstetter, Dempsay, Jewell, and White.
Journal of yesterday read and approved.

* * * * *

At 12 o'clock m. the senate proceeded to the hall of the house of representatives.

After adjournment *sine die* of the joint session the senate reassembled in the senate chamber.

The President in the chair.

At 1.45 p. m., on motion of Mr. Weiler, the senate adjourned until 10 o'clock a. m. to-morrow.

Attest:

M. C. ATHEY,
Secretary.

N. B. WILLEY,
President of the Senate.

UNITED STATES OF AMERICA,

Department of State, Secretary's Office, Idaho :

I, A. J. Pinkham, secretary of the State of Idaho, do hereby certify that the annexed are true and correct extracts from the journal of the senate of the first session of the legislature, convened at Boise City, December 8th, 1890, and now of record in this office.

In testimony whereof, I have hereunto set my hand and affixed the great seal of the State. Done at Boise City, the capital of Idaho, this 25th day of December, A. D. 1890.

[SEAL.]

A. J. PINKHAM,
Secretary of State.

ARTICLE IV, Sec. 15 of the constitution of the State of Idaho provides :

The seal of the Territory of Idaho as now used shall be the seal of the State until otherwise provided by law.

IN THE SENATE OF THE UNITED STATES.

JANUARY 12, 1890.—Ordered to lie on the table and be printed.

Mr. PLATT presented the following

MEMORIAL FROM CITIZENS OF THE UNITED STATES PRAYING
THE PASSAGE OF THE BILL (H. R. 10881) RELATING TO INTER-
NATIONAL COPYRIGHT.

To the honorable the Senate of the United States :

The undersigned citizens of the United States pray your honorable body to pass the bill (H. R. 10881) relating to international copyright.

The honor of the nation demands that authors everywhere, whose productions inure to the use and advantage of our people, should have a reasonable compensation for their skill and industry secured to them by law. In the absence of such a law, the works of American authors are subjected to an unfair competition with foreign literature, whereby the prosperity and vigor of the literary art amongst our people are greatly depressed. The enactment of such a law would powerfully encourage the production of native works by native authors, thus preserving and spreading American principles and ideas in our own land and multiplying their influence abroad. The stimulus to American authors supplied by such a law would operate, conformably to natural laws, to create, establish, and maintain amongst us for all time a sound, cheap native literature.

JAMES C. WELLING.
A. R. SPOFFORD.
JOHN J. KEANE.
J. C. BANCROFT DAVIS.
DAVID D. PORTER.
GEORGE KENNAN.
J. R. SOLEY.
S. P. LANGLEY.
G. BROWN GOODE.
SIMON NEWCOMB.
T. C. MENDENHALL.
E. M. GALLAUDET.
A. W. GREELY.
GEO. W. MELVILLE.
J. G. BUTLER, D. D.

W. H. MILBURN, D. D.
B. SUNDERLAND.
ROBERT P. PORTER.
W. T. HARRIS.
WILLIAM HARKNESS.
HENRY GANNETT.
SWAN M. BURNETT.
GARRICK MALLERY.
C. E. DUTTON.
ELLIOTT COUES.
N. S. LINCOLN, M. D.
Z. T. SOWERS, M. D.
C. H. DAVIS, U. S. N.
B. E. FERNOW.

WASHINGTON, January 12, 1891.

IN THE SENATE OF THE UNITED STATES.

JANUARY 12, 1891.—Ordered to lie on the table and be printed.

Mr. CULLOM presented the following

**MEMORIAL OF CITIZENS OF ILLINOIS REMONSTRATING AGAINST
THE PASSAGE OF THE CONGER LARD BILL, AND PRAYING THE
PASSAGE OF THE BILL TO PREVENT THE ADULTERATION OF
FOOD PRODUCTS.**

**MEMORIAL OF THE FARMERS' MUTUAL BENEFIT ASSOCIATION OF
THE STATE OF ILLINOIS.**

SPRINGFIELD, ILL., *October 21, 1890.*

Hon. LEVI P. MORTON,

President of the Senate of the United States:

The undersigned, delegates to the State convention of the Farmers' Mutual Benefit Association of the State of Illinois, held this day at Springfield, Ill., most respectfully present this, their petition, to the Senate of the United States, praying for the speedy passage of Senate bill No. 3991, commonly known as the Paddock pure food bill, which bill was introduced in behalf of the Farmers' Alliance of Nebraska by Hon. A. S. Paddock, a Senator of that State, and chairman of the Agricultural Committee of the Senate. Said bill, if passed, will prevent the adulteration and misbranding of food and drugs. Senator Paddock, in his able report No. 1366 on the bill, states "that of 376 articles of diet in daily use in every household 255, or more than two-thirds, were found to be adulterated."

The adulteration and sale of these counterfeit articles of food depresses and lowers the price of the honest and genuine food products of the farmer. The Paddock bill is therefore in the interest of the agricultural classes, and while it allows free competition, it compels all food products, under heavy penalties, to be, first, healthful; second, plainly and honestly branded; third, of proper quality or strength; fourth, not "doctored;" fifth, not counterfeit; sixth, made from proper substances; seventh, free from any adulteration whatever; and we therefore pray for its speedy passage.

We earnestly oppose, however, the passage of the Conger compound lard bill, which places a tax on compound lard and prohibitory restriction on the sale of the same and increases the number of revenue officers of the country.

The reasons for our opposition to the Conger bill are as follows:

First. It singles out only one article, which it alleges is adulterated, and provides no remedy for the 255 other articles as set forth and provided for in the Paddock bill.

Second. It increases the number of revenue officials of the country. We already have over 100,000 officeholders who are eating up the substance of the taxpayer.

Third. The Conger lard bill was introduced at the request of a Boston pork-packer; the Paddock bill at the instance of the Farmers' Alliance of Nebraska. The Conger bill is supported by all the pork-packers of the country and by the Big Four of Chicago. It will create a monopoly and will enable the large packers to form a lard trust. The Paddock bill has the united support of the farmers of the entire country.

Fourth. The Farmers' Alliances of Alabama, Arkansas, Florida, Georgia, North Carolina, South Carolina, Louisiana, Mississippi, Tennessee, and Texas protest against the passage of the Conger bill, and a remonstrance against its passage was signed by 10,000 farmers from Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, Kansas and Colorado at the St. Louis Fair, October 11, the last past.

Fifth. The Farmers' Alliance, at their national convention held in St. Louis, Mo., in December, 1889, adopted the following plank in their declaration of principles: "*Believing in the doctrine of 'equal rights to all and special privileges to none,' we demand that taxation, National or State, shall not be used to build up one interest or class at the expense of the other.*" We believe that the money of the country should be kept as much as possible in the hands of the people, and hence we demand that all revenues, National, State, or county, shall be limited to the necessary expenses of the Government, economically and honestly administered." And the Farmers' Congress, held again in August of this year (1890) at Council Bluffs, Iowa, reaffirmed said plank in the following language: "*Believing in the doctrine of equal rights to all and special privileges to none, we demand that our national legislation shall be so framed as not in the future to foster and build up one industry at the expense of another.*"

Therefore, as the Conger bill builds up the industries of the hog-packers, the big four, and the monopolists generally, at the expense of the industries of compound lard, we declare it to be contrary to the intent and spirit of the platform and organization of the National Farmers' Congress of America.

Therefore, opposed to fraud, we favor the Paddock pure food bill.

Opposing, however, centralization, opposing increase in the officials of the country, opposing class and sectional legislation, we oppose the Conger lard bill, and we remain, respectfully,

Name of delegate.	Address.	Assembly.
Cicero J. Lindley	Greenville, Ill. ....	.....
James Creed, treasurer	Walnut Hill, Ill. ....	.....
Wat. Bestow	Jeffersonville, Ill. ....	.....
Spencer Wyckoff	Jersey County, Ill. ....	.....
John K. Moss	Jefferson County, Ill. ....	.....
W. E. Poland	Richland	31
A. L. Maxwell	Crawford County	66
William Givens	Edgar County	77
Thomas Ratcliff	Cumberland	1826
Jesse Hanon	Christian	2360
George F. Fanning	Macoupin	4430
W. N. Culp	do	3639
Jamms M. Clepps	Piatt	3409
Byron Cheder	Moultrie	2914
O. R. Baker	Piatt .....	.....
W. J. Simons	do	3584
G. W. Hoffman	McLean County	4504
C. S. Reynolds	do	3097

Name of delegate.	Address.	Assembly.
A. Winegardner	De Witt County	1373
G. W. Hedrick	McLean County	
James Stewart	A. S. P. S. F. W. Ba Weldon	
N. M. Barnell	De Witt	1373
D. N. Meriell	do	1760
Thomas L. Mitchell	Moultrie County	1953
E. Gaul	do	
E. P. Deeds	Macoupin County, Ill	4355
Henry Burner	Crawford	2444
John P. Weyer	do	2666
H. P. Richey	do	2941
A. W. James	do	1645
O. O. Tanbeneck	Clark County	1709
P. J. Bowman	Cumberland	2307
J. R. Tate	Washington	414
L. Husemann	do	551
J. H. Dippel	do	253
William G. Brown	Sangamon	2173
W. P. McLoud	do	3146
T. W. Wilson	do	2296
A. J. Barracks	do	2414
Edward Harbison	do	2724
J. B. Sheapley	Clark	2399
W. M. Montgomery	Coles	3424
John E. Compton	Winnebago	4241
J. Moore	Marion	837
James M. Washburn	Williamson County	20
W. H. Boles, general organizer F. M. B. A.	Woodford County	
J. W. Sain	Bushon, Coles County, Ill	4757
Lewis Geant	Douglas	
Robert S. Clark	Wayne	5
Robert H. Gray	Christian	1602
James Cobbel	Iron, Ill	490
W. J. Gilpin	Rock Island	88
Alex. S. Jessup	Wayne	5
Frank Moore	Randolph	861
A. Gallagher	Mode, Ill	1579
H. B. Langley	Taylorville, Ill	1890
R. E. Gibbon	Arthur, Ill	2780
S. G. Brown	Wabash	1028
A. A. Fulenwider	Jonesborough, Ill	14
R. Perry	Shelby County, Ill	
John S. Crawford	do	1230
Seth Mason	Christian County	1834
G. W. Monroe	Moultrie County	2143
J. S. Lindly	Madison	2868
Chas. E. Palmer	Richland	1051
W. E. Robinson, sec'y State F. M. B. A.	Bond	45
W. N. Wood	Moultrie	2920
Jesse Ameintrout	do	2727
C. Connor	Assumption P. O., Shelby County	983
Jacob Coplin	Shelby	3764
D. R. Love	Jasper	1377
J. H. Beckett	Richland	1051
Frank Sleffy	do	972
J. S. Johnson	White County Assembly	21
L. L. Snedeker	Edgar County	77
Ezek. McDaniel	do	77
J. F. Boyer	do	77
James Watson, prest. county assembly	do	77
L. R. Horner	Perry County, Ill	9
Wm. H. Smith	do	7
J. B. Curlee	Tamaroa, Ill	7
H. H. Haaff	Chicago	
J. Harvey Scribner	Taylorville, Christian County	40
W. B. Cashin	Owaneco, Ill	992
C. D. Downing	Wapella, De Witt County, Ill	2831
Wm. Capron	De Witt County, Ill	
S. T. Hopson	Macoupin	2885
H. Gaskins	Christian	3029
H. H. Hall	Williamson	20
J. M. Brandon	do	20
M. McMurray	Jasper	1107
W. M. Reid	Williamson County	20
J. S. Ewing	Christian	
Peter Miller	St. Clair	4131
E. R. Headley	Sangamon	4340
E. L. Willeford	Bond County	2959
Joseph Chambers	Jersey County Union	4444
E. S. Wilson	Richland County	
C. Wood	Christian	1922
E. Schneider	Hardin	24
K. W. Ingram	do	24

Name of delegate.	Address.	Assem- bly.
J. W. Perisho	Edgar County	77
H. F. Jones	Clinton County	4060
I. N. Saffle	Moultrie County	76
S. D. Stocks	Shelby County	76
Daniel Sibert	H. C. Allen	
C. M. Heard, president		57
Geo. Connard		
Chas. J. Lentwiler	Madison	3145
H. H. Chapman	Jasper	1786
Wm. Hartsel	Shelby County Lodge	2823
D. L. Bowles	Emden, Ill.	983
Geo. W. Shreve	Elkhart, Ill.	
W. B. Stroud, jr.	Atlanta, Ill.	3466
Walter J. Casper	Johnson County	22
N. S. Clark	Jasper County	982
H. J. Merceret	Willow Hill	1630
J. W. Needham	Cumberland	2916
L. S. Brayfield	Perry County	307
Columbus Clark	Clay County	915
James R. Brown		
G. W. Gwin	Effingham	50
J. P. Smith	St. Clair	42
Louis Sheets	do	42
Elias Hoskins	Mason County	
Jas. T. McKibben	Sandoval, Ill.	758
W. T. Dixon	Bond County	1162
John Waite	Jefferson	363
E. L. Armstrong	Christian	2022
M. Dunkel	Sangamon County	3564
Geo. Howell	Shelby	1222
A. Alson	Sangamon	455
H. Mehler	Crawford	3081
C. H. Werner	Sangamon	455
A. E. Harrington	Shelby	3686
William Hall	Hamilton	191
Henry S. Williams	Sangamon	3321
J. F. Harrington	Wabash	
J. F. Boyer	Kansas	1943
Thos. Woods	Coles County	3787
W. Bell	Douglas	
Mathew Telford	Jefferson	624
Arthur P. Henderson	Edwards	859
W. E. Smith	do	796
Wm. Wham	Marion	739
T. M. Crowe	Monroe County	58
Hermann Mueller	do	58
J. R. Gulick	Mahomet, Ill.	
J. F. Culp	Cowden	1044
J. F. Harrell	Clay	802
J. H. Scribner	Christian, Ill.	1153
Alonzo Jones	Jefferson County	13
W. A. Dobson	Clinton	23
John Palmer	do	23
T. J. Johnson	Clark	1565
S. W. Webster	Sangamon	2740
M. M. Sharp	Boone County	45
S. Schunnerman	do	Do.
John McAlister		
Sam Blunt	Boone County	45
Chas. L. Gorden	Christian	40
Wm. Rogan	Clinton County	
C. B. Bartlett	Jersey	4269
Elisha Webb	Johnson County	22
James M. Segraves		3735
P. S. Struble	Menard County	
N. Miller	Richland	35
Wm. T. Layton	Fuller's Point	2981
F. G. Blood	Mt. Vernon, Ill.	
M. D. Coffun	Homer, Ill.	3613
J. W. Sain	Coles Co.	4757

IN THE SENATE OF THE UNITED STATES.

JANUARY 17, 1891.—Presented, referred to the Committee on the District of Columbia, and ordered to be printed.

STATEMENT OF BUILDINGS RENTED BY THE UNITED STATES IN
THE DISTRICT OF COLUMBIA, INCLUDING THE BUILDINGS
RENTED FOR THE USE OF THE DISTRICT GOVERNMENT.

TREASURY DEPARTMENT,
January 16, 1891.

SIR: In reply to your communication of the 11th ultimo, I have the honor to inclose herewith a list of the buildings in the District of Columbia rented by the Government and the amount of rental paid therefor, including buildings rented for the use of the District government. The statement shows a yearly rental paid amounting to \$177,698.

Respectfully, yours,

WM. WINDOM,
Secretary.

Hon. JUSTIN S. MORRILL,
United States Senate.

Statement of buildings rented by the United States in the District of Columbia, including buildings rented for the use of the District government.

Location.	Purpose, etc.	Annual rental.
Rented by Department of State: Seventeenth street NW	Stable and wagon-shed	\$600
Rented by the Treasury Department:		
No. 1308 F street	For Marine-Hospital Service	1,800
No. 1333 and 1335 F street	For Bureau of Statistics	3,070
No. 1428 E street	Treasury stables	650
New Jersey avenue SE	For Coast and Geodetic Survey, main office.	10,500
No. 205 New Jersey avenue SE	For Coast and Geodetic Survey, archives.	6,000
		22,020
Rented by the War Department:		
No. 1814 G street NW	For Medical Dispensary	1,000
Eighteenth and G streets NW	For office of Records of the Rebellion	3,000
Seventeenth street, between F and G	For office of Record and Pension Division.	2,400
		6,400
Rented by the Navy Department:		
No. 1425 New York avenue NW	For Navy Pay Office	720
No. 1707 New York avenue NW	For Naval Dispensary	2,400
Corner of New York avenue and Seventeenth street NW.	For Hydrographic Office	1,500
Pennsylvania avenue and Nineteenth street ...	For Nautical Almanac Office	960
		5,580

Statement of buildings rented by the United States in the District of Columbia, including buildings rented for the use of the District government—Continued.

Location.	Purpose, etc.	Annual rental.
Rented by the Interior Department:		
Northeast corner Eighth and G streets NW....	For Bureau of Education	\$4,000
Northwest corner Eighth and G streets NW ..	For General Land Office	2,000
Atlantic Building, F street NW	For Indian Office	5,500
Hooe Building, F street NW	For Geological Survey	10,000
Sun Building, F street NW	Census Office	1,800
Inter-Ocean Building, Ninth street NW	do	15,870
Lincoln Hall Building, Ninth and D streets NW ..	do	3,600
Second National Bank, Seventh street NW ..	do	5,040
Harrison Building, Third and G streets NW ..	do	12,500
Corner Massachusetts avenue and North Capitol street.	do	4,200
		<u>64,510</u>
Rented by the Post-Office Department:		
Part of Seaton House Building, Louisiana avenue.	For city post-office	8,000
Fourth and East Capitol streets (cellar and first floor).	For branch city post-office	900
No. 1413 F street NW. (first floor)	do	1,000
Northwest corner Eighth and E streets NW ..	For Money-Order Office, Post Office Department.	8,000
No. 914 E street NW	For Money-Order Division, Sixth Auditor's Office.*	4,000
Nos. 418 and 420 Ninth street NW. (second and third floors).	For Topographer's Office	1,500
Nos. 611 and 613 E street NW	For Division of Post-Office Supplies	4,000
Nos. 479 and 481 C street NW	For mail-bag repair shop	3,000
		<u>30,400</u>
Rented by the Department of Labor:		
Building corner New York avenue and Fifteenth street.	For Department of Labor	5,000
Rented by the Interstate Commerce Commission:		
Sun Building (three floors)	Interstate Commerce Commission	<u>11,480</u>
Rented by the District of Columbia:		
First street N W	For District Building	3,600
No. 501 D street N W	For Police Headquarters	1,200
No. 503 D street N W	For Health Office	1,000
Anacostia, District of Columbia	Addition to police-court building	600
	For police station	200
For use of the public schools:		
Seventeenth street, between P and Q streets, NW.	Minor School Building	2,500
H street, between Sixth and Seventh streets, NW.	Miller School Building	1,200
Sixth street, between B and C streets, NE....	Peabody annex	696
Mount Pleasant	First Baptist Church	120
Fourteenth and N streets NW. (two rooms) ..	Memorial Lutheran Church	600
No. 1615 M street NW. (two rooms)	Bethel Hall	480
Nos. 603 and 605 O street NW	Schools	800
No. 628 O street NW	do	600
Nos. 624 and 626 O street NW	do	1,800
No. 917 P street NW. (two rooms)	do	336
No. 15 D street NW	do	360
Anacostia, District of Columbia	Anacostia Lodge, F. A. A. M. (school) ..	400
For use of the District militia:		
Pennsylvania avenue and Seventh street	Center Market Armory	5,000
Fifteenth street NW	Washington Light Infantry Armory	1,500
No. 339 Pennsylvania avenue NW	Third Battalion Armory	900
No. 706 O street NW	Seventh Battalion Armory	1,200
No. 414 Third street NW	Eighth Battalion Armory	1,000
New York avenue, between Thirteenth and Fourteenth streets, NW.	Rink Armory	2,400
No. 702 Seventeenth street NW	Headquarters	1,296
No. 704 Seventeenth street NW	Store-room	120
Nos. 927 and 929 D street NW	Rifle Gallery Armory	1,800
		<u>31,708</u>

* At rate of \$4,000 until February 1, 1891, and \$9,000 thereafter for another building.

Statement of buildings rented by the United States in the District of Columbia, including buildings rented for the use of the District government—Continued.

RECAPITULATION.

Buildings rented by Department of State	\$600
Treasury Department	22,020
War Department	6,400
Navy Department	5,580
Interior Department	64,510
Post-Office Department*	30,400
Department of Labor	5,000
Interstate Commerce Commission	11,480
District of Columbia	31,708
Total	177,698

* And \$5,000 additional after February 1, 1891.

IN THE SENATE OF THE UNITED STATES.

JANUARY 17, 1891.—Ordered to lie on the table and be printed.

Mr. STEWART submitted the following

M O T I O N :

I move that the bill (H. R. 11045) be recommitted to the Committee on Privileges and Elections with instructions to so amend the bill as to provide for elections of members of Congress on days when no other elections are held in the several States and so as to provide for separate and independent registration of such electors as may be qualified to vote for members of Congress.

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IN THE SENATE OF THE UNITED STATES.

JANUARY 15, 1891.—Ordered to be reprinted as a miscellaneous document.

NOTES OF A HEARING BEFORE THE SENATE COMMITTEE ON
FISHERIES, OF PARTIES INTERESTED IN THE BILL (S. 227,
FORTY-NINTH CONGRESS, FIRST SESSION,) FOR THE PROTEC-
TION OF FISHERIES ON THE ATLANTIC COAST.

THE MENHADEN FISHERY.

The bill, as proposed to be amended, was read, as follows :

[S. 227. Forty-ninth Congress, first session. In the Senate of the United States, December 9, 1885.]

Mr. SEWELL introduced the following bill, which was read twice and referred to the Committee on Fisheries :

A BILL for the protection of fisheries on the Atlantic coast.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it shall not be lawful for any person or persons, by day or night, to put, place, haul, draw, or in any manner use any purse-net, pound, fyke, weir, or other appliance for the capture of menhaden upon the high seas within [two] three miles of the Atlantic coast, or in any arm of the sea, river, haven, creek, basin, or bay along the said coast within the jurisdiction of the United States and not within the jurisdiction of any State.

SEC. 2. That it shall not be lawful for any person or persons, by day or night, to put, place, haul, draw, or in any manner use any purse-net, pound, fyke, weir, or other appliance upon the high seas within [two] three miles of the Atlantic coast, or in any arm of the sea, river, haven, creek, basin, or bay along the said coast within the jurisdiction of the United States and not within the jurisdiction of any State, for the capture of fish to be manufactured into oil or into fish-guano or other fertilizing material.

SEC. 3. That any person violating the provisions of this act shall, upon conviction thereof, be liable to a penalty of one thousand dollars, of which one-fourth shall be paid to the person upon whose information the said conviction shall be had, and the remainder shall be *paid into the Treasury of the United States*.

SEC. 4. That any steam or sailing boat or vessel of any description, and any net or nets, or other apparatus or tackling, which shall be used, or shall be *knowingly* hired or loaned for the purpose of being used, in any of the aforesaid waters, contrary to the true intent and meaning of this act, shall be forfeited to the United States; and it shall be the duty of the United States marshals of the districts bordering upon the said coasts to seize the said boats, vessels, nets, tackling, or other apparatus; and any marshal making such seizure shall report the same to the United States district court judge of the district bordering upon that portion of the sea upon which such seizure is made, or of the district within which such seizure is made; and the said judge, upon satisfactory evidence that the said boats, vessels, nets, tackling, or other apparatus have been used, or have been *knowingly* hired or loaned for the purpose of being used, contrary to the true intent and meaning of this act, shall condemn the same and direct their sale at public auction by the said marshal; and the proceeds of the said sale shall be devoted, first, to the payment of the costs and charges of the said proceedings, and the remainder, if there be any, shall be [appropriated to the uses of the United States Commission of Fish and Fisheries] *paid into the Treasury of the United States*.

SEC. 5. That any boat or vessel, net or nets, or other tackling or apparatus which shall be used, or which shall be *knowingly* loaned or hired *to be used* [for the purpose of being used] for any purpose contrary to the provisions of the first or second section of this act, shall be liable for the penalty imposed by the third section of this act, for which sum the said boat, vessel, net or nets, or other tackling or apparatus may be seized in port and proceeded against by way of libel in any district court of the United States having jurisdiction of the offense.

SEC. 6. *The provisions of this act shall not apply to the use of nets having meshes not less than nine inches.*

[The amendments proposed to be made are to strike out the words between brackets [] and to insert the words printed in *italics*.]

The CHAIRMAN (Senator PALMER). I suppose there are a number of interests to be heard. If there is no objection on the part of any member of the committee, we will first hear the fertilizing interest connected with the menhaden fisheries. I think Mr. de Ghequier and some others are here to represent that interest. Who will be your spokesman, gentlemen?

Mr. DE GHEQUIER. I am not, strictly speaking, representing the fish interest, but simply the fertilizers.

The CHAIRMAN. That is what we want to hear.

STATEMENT OF A de GHEQUIER.

Mr. A DE GHEQUIER (of Baltimore). I was at a meeting on Monday, in New York, which was attended very largely by parties from the South, the North, and the West, and at this meeting, by resolution of the members present, and afterwards by resolution of the board, the following memorial was decided upon to be presented to the Committee on Fisheries of the Senate.

Hon. THOMAS W. PALMER,

Chairman Committee on Fisheries, United States Senate, Washington, D. C. :

The National Fertilizer Association herewith begs to respectfully submit for your earnest consideration some of the reasons why Senate bill No. 227 should not be favorably reported upon and passed :

In the first place, it is not admitted that the operation of the menhaden fisheries caused any diminution of food fish along the New Jersey coast, nor that the bill will benefit any class of the community. For the menhaden, as is well known, is not, strictly speaking, a food-fish ; on the other hand, the industries directly or indirectly engaged in catching, preparing, and utilizing the menhaden and its products give employment to a far greater number of men dependent for the support of their families upon their present occupations than the total number of complaining or amateur fishermen along the Jersey coast can possibly amount to.

In the second place, if it is claimed that the catch of food-fish along the Jersey coast is growing less and less, a claim which is by no means supported by facts, it would seem the part of wisdom to seek for the cause of it in a scientific way by obtaining the opinion of experts, notably the United States Commission on Fish and Fisheries, and other fishermen of experience along the whole Atlantic coast, rather than to blame for it a branch of industry which appears to have no tangible connection with diminution of fish along the Jersey coast. Were we looking for causes for this alleged decrease in food-fish along the Jersey coast, we would have to consider the immense amount of sewage emptied by the cities of New York, Brooklyn, Jersey City, Hoboken, etc., into the very waters where the decrease of fish is claimed to occur, and for other causes unnecessary to mention here.

The fertilizer trade, though not further interested in the matter than to protect the vast agricultural interests of the country with which it is so closely connected, begs to submit other reasons still.

Fish-scrap in its various forms furnishes a most valuable material for supplying fertilizers with the requisite amount of ammonia, and the extent to which this is done may be inferred from the fact that large quantities are annually consumed by the trade and converted into fertilizers. The fertilizing properties of this menhaden scrap, through the operation of the soil, produce such an enormous food supply in wheat and corn (not to mention its influence upon cotton and tobacco) that it is in this connection, and in this alone, the menhaden should be considered a "food-fish."

The destruction of the menhaden fishery means not alone an increase in the cost of food in this country, but also a decrease in the quantity and value of all products of the soil. To withdraw this source of ammonia from the agriculturist would mean, therefore, to narrow down to that extent the supply of ammoniates, and under the laws of supply and demand, the price of other sources of ammonia would be enhanced to a degree that would compel the tillers of the soil to pay an increased price for fertilizers. It is not the manufacturers, but the farmer who requires fertilizers for the proper cultivation of his land and the raising of profitable crops, who would thus be taxed for the benefit of the promoters of this bill. Besides, since nature has supplied us with a source of ammonia on our coast, and immediately and cheaply available for agriculture, from the time of the Indian down to the present day, it would seem well to hesitate before striking down this industry and placing our farming community in a state of dependence upon the importation of fertilizing material from foreign countries. And it is this aspect which, in the opinion of our association, imparts to this subject the character of a serious question of political economy.

The association foregoes to call attention to the direct effect of the passage of the bill upon the menhaden fish industry, upon the vast amount of capital and labor thrown out of employment, etc., but feels confident that a full and fair consideration of the several facts laid before you in this memorial will induce you to pause before favorably indorsing a measure which in its ultimate effects would inflict an injury upon the people of the country, whom it is the province of prudent and wise legislation to protect and guard.

By order of the board of directors of the National Fertilizer Association, at a meeting held in the city of New York, February 8, 1886.

J. M. GLIDDEN,
(Of Boston,) *President.*

E. H. FROST,
(Of Charleston, S. C.) *Vice President.*

A. DE GHEQUIER,
(Of Baltimore,) *Secretary.*

The CHAIRMAN. Do you wish to say anything further?

Mr. DE GHEQUIER. I simply wish to say that there is only one available source of ammonia outside of this.

The CHAIRMAN. Are those ideas incorporated in these resolutions?

Mr. DE GHEQUIER. This memorial which I have just read, and of which the original is in your hands, embodies about all we wish to say.

The CHAIRMAN. All we want is the gist of the matter.

Mr. DE GHEQUIER. We should have to import ammonia from the other side if this source of supply is cut off.

Senator STANFORD. What extent of country is fertilized by this fish?

Mr. DE GHEQUIER. The annual production of fertilizers now reaches about a million of tons. Outside of this source of supply there are imported from England from 60,000 to 80,000 tons in addition.

The CHAIRMAN. Upon what area of country is that million tons used?

Mr. DE GHEQUIER. That is spread all over the country. The Western States are beginning to use it now. California begins to develop manufactories there.

The CHAIRMAN. What do you call the manure?

Mr. DE GHEQUIER. It is an ammoniac superphosphate. It is sold under various names. There are two classes of fertilizers; one is simply phosphoric acid, bones, etc., treated with sulphuric acid, and made available, and the other is this same acid phosphate, supplied with ammonia, either in its direct form or with nitrogen, and then the potash salts which are imported from the other side.

The CHAIRMAN. What is considered an average weight for an acre?

Mr. DE GHEQUIER. At present they apply in this country about 200 pounds to the acre as an average, but the farmers begin to learn now that if they apply more it is better. There are farmers in Maryland who raised this last year by the application of 600 pounds of fertilizers 62 bushels to the acre.

The CHAIRMAN. What is the market price per ton of this ammonia?

Mr. DE GHEQUIER. The market price varies according to the value of the ingredients. Of course fertilizers that analyze very high command a higher price in the market.

The CHAIRMAN. Give us the maximum and the minimum.

Mr. DE GHEQUIER. One fertilizer has been sold in the market for \$95 a ton. That was an imported one. The average fertilizer here analyzes about 8 per cent. of phosphate, 2 per cent. of ammonia, and from 1 to 2 per cent. of potash.

The CHAIRMAN. What is that worth?

Mr. DE GHEQUIER. That is worth from \$30 to \$36, cash price at the factory.

The CHAIRMAN. What is the minimum price?

Mr. DE GHEQUIER. Low-graded acid phosphates may be bought from \$14 upwards.

Senator SEWELL. How many tons of the fish product go into the fertilizer?

Mr. DE GHEQUIER. About 30,000 dried fish, and certainly not less than that of scrap of wet fish.

Senator SEWELL. Forty-five thousand tons is mixed with a million tons of fertilizer?

Mr. DE GHEQUIER. Rather constitute a portion of it.

Senator SEWELL. What is the price of that scrap?

Mr. DE GHEQUIER. The scrap is worth sometimes as high as \$2.50 to \$3. It is sold entirely by analysis.

Senator SEWELL. Is it not sold by the ton?

Mr. DE GHEQUIER. By the ton, but only on the analysis basis. For instance, the manufacturer contracts to buy 200 tons, and to pay so much per unit on that quantity.

Senator ALDRICH. What proportion of the ammonia which is used in your fertilizers comes from the fish product; can you tell? What proportion of the whole amount used, I mean? Can you give any idea of that?

Mr. DE GHEQUIER. Thirty thousand tons in a million.

Senator ALDRICH. What proportion of the ammonia comes from the fish product that you use? You buy ammonia in other forms, I suppose.

Mr. DE GHEQUIER. Yes.

Senator ALDRICH. What proportion of the amount you use comes from the fish product?

Mr. DE GHEQUIER. I should say 50 per cent. of it; fully 50 per cent., because outside of the ammonia the fish scrap contains, of course, always a certain amount of phosphate of lime.

Senator ALDRICH. You manufacture about 1,000,000 tons?

Mr. DE GHEQUIER. Of fertilizer.

Senator ALDRICH. So that 500,000 tons of that represent the fish product. That is, the ammonia for it is furnished from the fish product?

Mr. DE GHEQUIER. The ammonia for about 500,000 tons of that is furnished by the fish.

Senator DAWES. Is that confined to menhaden, or does it include other kinds of fish?

Mr. DE GHEQUIER. To my knowledge there are no other kinds of fish for the purpose; that is the only one that is used for oil in the first place, and the refuse afterwards is used for fish scrap.

Senator DAWES. In what locality is the menhaden taken mostly?

Mr. DE GHEQUIER. I believe the fishermen are more competent to

answer that than myself. We have them in the Chesapeake and along the Atlantic coast.

Senator DAWES. Do you know anything about the habits of the fish?

Mr. DE GHEQUIER. Except what I understand that the menhaden is very strange in its habits. Since they passed the law in Maine prohibiting the fishing of menhaden, it has not been seen on the coast of Maine. [Laughter.] It seems to have abandoned localities where it is not allowed to be caught.

STATEMENT OF JOSEPH WHARTON.

Mr. JOSEPH WHARTON (of Philadelphia). I own land in the State of New Jersey. Some of the land is very poor in the State of New Jersey. There are a few oases. The main difficulty in prosecuting agriculture there is to get anything to fertilize the soil with; and I was advised to put up a menhaden factory on the shore for that purpose, which I did. I have been engaged in that for many years. I am fully persuaded that the whole region of New Jersey from the central line, where they get marl, out to the sea, will be very much endangered by the stoppage of the menhaden catching. The whole Atlantic coast, as the gentleman who has just spoken has given us to understand, depends upon artificial fertilizers. The western soil does not need them to any great extent; but the whole Atlantic coast depends upon artificial fertilizers, and as you have just heard one-half of the whole amount of those artificial fertilizers depends on the menhaden scrap, and the menhaden scrap is just so much clear gratuity taken by man from the sea.

The sea is constantly robbing the earth, as everybody knows. Its fragments pass down into the rivers, and from the rivers into the sea; and whatever little quantity of that man can regain in any way is certainly fair gain—proper for him to do. He is taking back a little from the hungry and greedy sea that is constantly devouring everything. Of all the forms in which fertilizers can be taken from the sea, and there are several, the kelp, for instance, on the English and Irish coasts, and some few other forms of fish fertilizers, dog fish on the coast of Maine, for instance, there is nothing comparable to the menhaden fishery. I suppose that all the other forms in which anything useful to the soil is taken from the sea do not amount to one-hundredth part of that which is taken by the menhaden fishery from the sea for the improvement of the land; and to destroy the menhaden fishery, which this bill would virtually do, because it is really in the nature of breaking up the entire business, would be to deprive the entire Atlantic coast of one-half of the resources which it now has for fertilizing, and the whole of that one-half which would be robbed from the Atlantic coast would be just that which comes for nothing. It is not the result of anything that is grown upon the land, but it is doubling the land somewhere else for the benefit of that part of the land which requires fertilizers, and it is a clear gain from the sea just as if it was taken from the air—an absolute clear gain to the soil of one-half of the entire amount of the artificial fertilizers which the whole Atlantic coast requires. The robbing of the farms of the whole Atlantic coast of one-half of their artificial fertilizers is so serious a matter that I can not think that the committee can consider this bill favorably, if they get that fact fairly impressed upon their minds.

There is no other point in which the agriculture of the Atlantic coast could be so seriously injured as by the stoppage of the menhaden industry. The damage that would be done to the persons engaged per-

sonally in the industry will be spoken of, no doubt, by some of those who are engaged in the fishery, but that is of less importance, in my judgment, than the damage to the farmers.

I could say more, but there are other gentlemen here waiting to speak, and I think I had better give them the opportunity.

The CHAIRMAN. You speak of this bill affecting the destruction of the menhaden fishery. Do you know the habits of the menhaden?

Mr. WHARTON. I know them in a general way.

The CHAIRMAN. Or the character of the menhaden fishery? This merely applies to fishing within 3 miles of land. Are not menhaden caught outside of that line?

Mr. WHARTON. They certainly are, but to capture menhaden you must go where the menhaden are. The menhaden are not quite so obliging as the gentleman who just now spoke would have us believe. They will not accept the invitation of men, but you have to go for them where they are. The habit of the menhaden fishers, as you will learn from some of the other gentlemen, is to follow the fish wherever they are found. The habit of the fish is to come to the coast. Where they come from is not clearly known, but they come upon the coast of the United States. They reach the coast probably somewhere about South Carolina, but they are never caught down there. Then they gradually and slowly travel up along the coast at variable distances from the shore, until they get up to the coast of Maine, or even farther, and there they halt awhile and turn down southward and go along the coast again, and they are caught during that northward and southward migration principally.

The CHAIRMAN. Do you know where they are reproduced—where they spawn?

Mr. WHARTON. No; I do not think anybody knows that; I am not competent to answer it, at all events; but to answer directly the question which this merely leads up to, the fish are sometimes close to shore, sometimes very abundant in the bays even, and sometimes far out to sea. I suppose there were never as many menhaden seen in a mass as those which Professor Baird, the head of the Fish Commission, mentioned in one of his reports. He said he saw in a single school of these fish—he sailed through them in the *Fish Hawk* a great many days, and he saw more in that one mass of fish which were noticed outside of what is ordinarily considered the fishing limit—out in the open sea there were more in that one mass of fish by perhaps a hundred fold than all that have ever been caught by man since the fishing of menhaden was first invented. The multitude of them is beyond computation. It is only a small fraction that come along the coast, but to deprive the fishermen of the opportunity of catching fish within 3 miles of the shore would in a great many instances entirely destroy the day's work or the week's work. They have to catch the fish where they happen to find them, and to establish an arbitrary line within which the fish shall not be caught would interfere with the business, and make it unprofitable to that extent that it would be better to quit the business altogether. It is a precarious business, the profit of it is very slender, and anything that would tend seriously to diminish the little profit would simply destroy it. The experience of the fishermen for the last two years or more, I think, has been a general loss. They have lost money instead of gaining. Last year I think that was universal.

Senator DAWES. What is the interest that is benefited by the bill?

Mr. WHARTON. I think that is as the gentleman who has just spoken has expressed it, a matter of the amateur fisherman along the coast

more than anything else. People go from the cities to the seashore, and they like to go out in a little boat, cast a line over the side, and catch a fish or two. They take a little of Mrs. Winslow's soothing sirup along with them and get their noses red and their faces sunburnt, and they can do that without catching fish as well as with.

Senator DAWES. Is there any industry affected?

Mr. WHARTON. None.

Senator DAWES. Is any invested capital affected?

Mr. WHARTON. There is a very slight industry of catching fish by hook and line for the market, but that is really quite insignificant. The chief part of the food fish caught for market are not caught by hook and line.

Senator DAWES. These are not used for food directly?

Mr. WHARTON. They can be used. I have eaten menhaden and found them good, but they are too bony. One name of the menhaden is bony. They are thought to be too bony for food.

The industries that are supposed to be promoted by this bill I should like to hear some of the advocates of the bill speak for. I have not been able to discover any important interest or industry that desires the passage of the bill.

Senator SEWELL. You see no industry connected with the bill itself? Do you call the employment of several thousand people, who live on hook-and-line fishing and supply the market of New Jersey, no industry?

Mr. WHARTON. I should like first to be satisfied that there are several thousand Jersey men depending on the hook-and-line industry for their livelihood. I have been along the Jersey coast a great deal.

Senator SEWELL. From the Delaware to the Sandy Hook there are.

Mr. WHARTON. You may be better informed upon that, but I think it a matter of some doubt as to that coast. I should think a very few hundred would embrace the whole of them, and even many of those depend on other things. They only practice fishing for part of the year.

Senator SEWELL. How many men are employed in the menhaden fisheries in New Jersey?

Mr. WHARTON. I would rather refer that to some of the other gentlemen who are more competent to speak.

Senator ALDRICH. Do I understand you to admit that the catching of menhaden does interfere with these people at all, or is it a matter of fancy?

Mr. WHARTON. I do not believe it interferes with them in the least. I think that is altogether a notion and a fancy. I do not like to refer to a gentleman who is not present, Professor Baird; I wish he was here. One of the things he said was that the destruction of menhaden by other fish is so infinitely beyond anything man can do in the way of destroying menhaden that what man does is utterly insignificant. That I thoroughly believe.

STATEMENT OF E. G. BLACKFORD.

Mr. EUGENE G. BLACKFORD (of New York). Mr. Chairman, I do not appear here as a menhaden fisherman, or in the interest of menhaden fishermen at all, nor in the interest of any of the parties affected. As commissioner of fisheries of the State of New York I have paid considerable attention to all matters pertaining to fish, especially sea fish, and I had the honor of assisting the Senate committee a few years ago in its investigations along the coast in the vicinity of New York. At one time I became strongly imbued in favor of the necessity of legislation for the protection of the sea fisheries.

I thought that this enormous catch of fish that was taken every year by menhaden steamers and mackerel vessels would certainly tend to deplete the ocean of valuable food fishes; and some two years ago I, as a member of the American Fisheries Society, meeting here in Washington annually, was asked to prepare a paper, and I started to prepare a paper in favor of legislation for the protection of sea fisheries. Not being much of a writer or speaker, it was a matter of considerable labor for me, and I went to work to get together my facts from my own diaries that I kept of the daily supplies of the markets, and of the prices and notes that I take of the large catches, in order to prepare this paper to be read; but when I got my material all together I found the facts were entirely opposite to the views which I had entertained, and the more I looked into the subject the more I became impressed that there was no necessity for legislation for the protection of any of the free-swimming ocean sea fishes.

I mention that particularly because I do not wish to be understood as not favoring protection of the fish that go into the fresh waters to spawn; but as to fish that spawn upon the ocean and do not go into rivers and streams to spawn I believe nature has provided for such an immense amount of reproduction that men can not, with all the million contrivances for catching fish, have any appreciable effect upon the total amount of fish in the sea. This view, as I said, I came to from examining into the facts, although I had started in favor of protective legislation, and I think that you yourselves, if you would give this matter careful investigation of the statistics that may be attainable with regard to, for instance, the mackerel fishery, of which we have figures going back a hundred years or more, and for codfish and other sea fishes, will find that notwithstanding the immense catch and large consumption of these fish, both for food and for other purposes, these same fish in our markets to-day are just as plenty and just as cheap, and I think somewhat cheaper because of the increased facilities for catching them.

I have understood that there has been a bill already reported to the House of Representatives restricting the catch of mackerel. Gentlemen in its favor argue, I suppose, on the same basis that they do for the restriction of the catch of menhaden, that it has a tendency to impair the quantity or quality of the supply for food. With regard to that particular fishery let me give you just one instance, a year ago, if it is not foreign to the subject to speak of the mackerel.

The CHAIRMAN. No, sir.

Mr. BLACKFORD. About the 1st of April the mackerel fleet struck an immense school of fresh mackerel, and they all loaded up and came into New York, and there was at one time upwards of 15,000,000 mackerel lying around the wharves in the vicinity of Fulton Market. Those mackerel were unloaded there just as fast as possible. Men, women, and children came from all parts of the city with baskets, and the wagons of licensed venders, and there was no question about the price. They gave a basketful for 5 or 10 cents, and would load a man's wagon for 25 cents. For the space of two or three weeks the poorer classes had the benefit of this immense catch of mackerel. They were distributed all through the city. Of course it was the means of a large class of people making money; not myself, although I am in the fish business. This glut of fish interfered with my business, so to speak, but for the people generally it was a great blessing, especially for the poorer class.

That single fact of itself in regard to the mackerel fishery is conclusive. That fishery has been prosecuted with all the perseverance

and ingenuity and enterprise that the fishermen of our coast are capable of for one hundred years, and yet there is this enormous take, which goes to prove that man as a factor is of no account in depleting the waters of the ocean.

The CHAIRMAN. Permit me to interrupt you. What was the reason of their giving away that immense amount of mackerel; could they not have been salted?

Mr. BLACKFORD. A large portion of those were salted, but at that season of the year the mackerel are inferior in fatness, the quality is not of the kind that makes them most desirable for salting, but a very large portion of that catch was salted and sold salted at a very low price, sold in the salted state for from \$2.50 to \$4 per barrel. I should like very much to read a short paper I wrote in connection with this, to have it incorporated into your minutes as my views with regard to it. It will take about seven or eight minutes to read.

The CHAIRMAN. Can you submit it and have it incorporated just as well?

Senator DAWES. Have you several copies?

Mr. BLACKFORD. I have copies of it. I can send you some.

Senator DAWES. Suppose you send each member of the committee one.

Mr. BLACKFORD. I will do so.

Senator SEWELL. You have said to the committee that you do not think fishing for menhaden depletes the food fish along the coast. Are your remarks principally directed to deep-sea fishing?

Mr. BLACKFORD. Yes, sir; that is, to what are called free swimmers, the free ocean fish.

Senator SEWELL. Has not the take of fish on the New Jersey inland waters been very much decreased in the last few years?

Mr. BLACKFORD. I can not say that it has from my observation.

Senator SEWELL. The people engaged in the menhaden fishery deny ever taking any food fishes. My recollection is that when you spoke before a committee of the Senate a few years ago you gave an account of some very large diminution of food fishes by the menhaden fishermen and selling them in the Fulton Market.

Mr. BLACKFORD. That is a fact. They did make very large catches of weakfish, and they steamed direct to Fulton Market, and we had just such a time of cheap fish in New York as I have before described, owing to that catch.

Senator SEWELL. Is it not customary for them to take anything within their reach?

Mr. BLACKFORD. I can not say from actual observation. From facts coming under my own observation in connection with the marketing of fish, I know that should they be able to catch large schools of bluefish, weakfish, Spanish mackerel, or any of the other valuable food fishes, it would pay them very much better to bring them to Fulton Market and sell them for food than it would to take them to the factories; it would bring them more money, and consequently their interest would be to market them. I know it has been alleged that they do catch a very large amount of food fish which is turned into oil and scrap, *but so far as my knowledge goes*, and I meet a great many of the fishermen and others connected with it, I have never found anything to confirm the idea or to prove that they did catch any considerable number of food fishes and use them for oil or scrap.

Senator SEWELL. Do you know anything about the proportion of fish that is caught within the proposed 3-mile limit of the coast, or do you confine your statement to the outside?

Mr. BLACKFORD. With regard to the catching of menhaden, I do not. I am not sufficiently well informed in the practical workings of menhaden fisheries to say whether the 3-mile limit would prohibit and destroy their fishery or not. There are others, of course, who are more familiar.

Senator SEWELL. Have you any knowledge of the habits of the fish, so as to be able to give the committee an idea of whether the hauling of these purse nets on the bottom of the shore within the 3-mile limit is or is not destructive of the feeding grounds of the fish? Take the sheepshead, for instance. They have a certain feeding ground. If you haul a deep net over it, dragging the ground, does it not interfere with them?

Mr. BLACKFORD. If I understand the method of the menhaden fishermen rightly, they do not really scrape the ground; they have a leaded line which goes to the bottom of the seine to keep the seine extended down, but I do not think they ever scrape the bottom of the sea.

Senator SEWELL. That depends altogether on the depth of the water where they are hauling.

Mr. BLACKFORD. Of course the sheepshead feed on muscles and small crustacea. For two years I made a series of investigations into the food of our principal food fishes, what they went for. For instance, they strike the bass and the bluefish. I employed a man to take a certain number of fish out of the market every day, open their stomachs, and examine them, and the only fish we have found who feed to any extent upon the menhaden are bluefish and striped bass, and the striped bass, particularly on the coast of North Carolina, seem to have a larger proportion of menhaden in them than the bass that we get farther east. It was rarely, if ever, we got menhaden out of the stomach of striped bass that was caught north of Sandy Hook.

Senator DAWES. You say you are a dealer in fish?

Mr. BLACKFORD. Yes, sir.

Senator DAWES. Do you deal in menhaden?

Mr. BLACKFORD. No, sir; not at all.

Senator DAWES. You deal in food fish?

Mr. BLACKFORD. In food fish.

Senator DAWES. So that anything that tends to furnish to you food fish cheaply would be for your interest, would it not?

Mr. BLACKFORD. Yes, sir.

Senator DAWES. If the taking of menhaden destroyed, directly or indirectly, the supply of food fish for you it would be against your interest, would it not?

Mr. BLACKFORD. Entirely so, sir. Anything that tends to make any of our food fishes scarce is an injury to my personal business.

Senator DAWES. What is the official position which you hold?

Mr. BLACKFORD. Commissioner of fisheries for the State of New York. I am one of four commissioners.

Senator DAWES. How long have you held that position?

Mr. BLACKFORD. Seven years.

Senator STANFORD. Are the pastures of the menhaden in the open ocean?

Mr. BLACKFORD. I should suppose that most of their food was found on the ocean, not particularly confined to the shores, but extending out probably to a considerable distance. So far as our investigations have proved the matter, we find that they feed upon minute jelly fish. They do not seem to eat anything of any size. We find a little, small, black

crustacea occasionally in their stomachs, but their principal food appears to be a small jelly fish, which sometimes will cover the water of the ocean for miles.

Senator STANFORD. Where do they spawn?

Mr. BLACKFORD. That is a fact which has never been demonstrated beyond question; we only arrive at it by inference. I think I testified before the Senate committee when it met in the vicinity of New York to the fact of finding small menhaden, about three-fourths of an inch to an inch long, in the waters of the Great South Bay. I think they were taken in the latter part of June. I should judge from the knowledge of the growth of fishes, they might possibly have been from six weeks to two months old, showing that the fish might have spawned in the month of May. They certainly must have spawned in that vicinity, for the young fish could not have traveled any great distance. Still, at the same time, the number of fish found is so small in comparison with what we ought to find when we know their spawning beds, that it does not prove the habits of the fish entirely. The finding of these young menhaden was an exceptional circumstance, and went to prove that they had been spawned within six weeks or two months in the vicinity of the waters of the Great South Bay on the south side of Long Island.

Senator STANFORD. You really have no evidence whether they spawn in deep or shallow water?

Mr. BLACKFORD. No, sir; we have not.

Senator DAWES. State that again.

Mr. BLACKFORD. As a rule, we do not know, we have no positive evidence, as to their general habit of spawning. The circumstance which I spoke of was an exceptional one of finding these young menhaden.

Senator DAWES. I understood Senator Stanford to inquire whether you were satisfied that they spawned in deep or shallow water.

Mr. BLACKFORD. We are not satisfied as to which they do spawn in, whether it is in deep or shallow water.

The CHAIRMAN. You speak of ocean-spawning fish?

Mr. BLACKFORD. Yes, sir.

The CHAIRMAN. What is the other distinction that you apply?

Mr. BLACKFORD. What are termed anadromous fish, fish that run up into the rivers from the ocean and find fresh water, where they spawn; for example, the shad and the salmon are the most notable examples of that kind, and the smelt also.

The CHAIRMAN. What are the ocean-spawning fish?

Mr. BLACKFORD. Codfish, bluefish, and eels are ocean spawners to a large extent.

The CHAIRMAN. By that do you mean that they spawn along the shores or out at sea?

Mr. BLACKFORD. There is no doubt that a very large number spawn at sea, in fact that the bulk of them spawn in the ocean and not along the shore.

The CHAIRMAN. You also said that from the character of facts which had come to your knowledge you were satisfied that all the fishing done by men did not affect the supply.

Mr. BLACKFORD. Of these particular fish known as ocean-spawning fish.

The CHAIRMAN. Does that apply to all fish?

Mr. BLACKFORD. All fish that are termed ocean-spawning fish, menhaden, bluefish, striped bass, and codfish particularly.

Senator STANFORD. The pasture ground of the fish that run up the rivers is limited.

Mr. BLACKFORD. Ocean fish, when coming into rivers to spawn, very seldom feed after getting a short distance up the river. For instance, a salmon when it enters a river has its stomach full and distended with food, and as it gets nearer to the spawning bed it becomes more and more cleaned out, and finally when you open a salmon that has arrived at the spawning bed you find the stomach entirely empty—no food at all.

The CHAIRMAN. How would this bill affect the interest of those men who follow fishing for a livelihood?

Mr. BLACKFORD. You mean the food fishermen, the men who fish for food fish for a living?

The CHAIRMAN. Yes.

Mr. BLACKFORD. From my own observation I can not see that the menhaden fishermen have affected the supply of food fish on our coast. I do not know but that the circumstance has already been stated to the committee—it is a matter which has been published by the United States Fish Commission—that in 1764 the bluefish disappeared entirely from our coast and were gone for several years. That was previous to any menhaden fishing or the catching of fish on any extensive scale, whether mackerel, menhaden, or others. The habits of sea fishes are governed by certain natural laws; there is no doubt that they are not influenced by man and can not be calculated upon, and their movements are erratic according to those unknown laws. For instance, bluefish a year ago this last summer were wonderfully abundant all along the Jersey coast; our market was glutted with them, and the price went down to 2 cents a pound. If they had not been taken off the market and refrigerated they would have sold for a cent a pound. They were very abundant. Last summer, on the contrary, they were very scarce, but the fishermen all reported that the bluefish were very abundant away off shore, but they would not take the hook and line, and they were off under such circumstances in deep water that the men could not use the nets. So the bluefish were not scarce last summer to the fishermen along the coast, because the fish itself was scarce, but because they did not go into the shore. They were all off at sea.

Senator DAWES. Could that be attributed to the fact that the fishermen had taken their food off in the shape of menhaden?

Mr. BLACKFORD. No, sir; for the very reason that the year before this the menhaden fishermen were prosecuting their industry with the same perseverance that they have for the last ten years and the bluefish were plenty the year before.

Senator DAWES. Is this law of the fish that you do not quite understand what makes the change of fishing grounds?

Mr. BLACKFORD. There are certain conditions probably of temperature more than anything else—the temperature of the water—that govern the movements of these large schools of fish. We have already ascertained that the temperature does affect the movements of shad. A few degrees rise in the temperature will bring the shad in larger quantities, and a few degrees fall of temperature will stop them. We think there is no doubt that more or less applies to all fishes, but still we have not facts to prove it in regard to them as we have in regard to shad.

Senator DAWES. Allow me to make an inquiry in reference to this bill; you know so much about fishes and I so little. This bill confines its operations to within 3 miles of the coast, and also within portions of the 3 miles that are not within the jurisdiction of any State. If the prohibition is within 3 miles and still it is only in such portions of the 3

miles as are not within the jurisdiction of any State, can you tell me what that would affect? What portion of the 3 miles bordering on any State is outside of the concurrent jurisdiction of the State and the United States?

Mr. BLACKFORD. As I understand it, for instance you take a very large open bay on the coast. If a line is drawn from the headland here to the headland there [illustrating], inside of that line is within the jurisdiction of the State, while outside of that line to the extent of 3 miles is under the jurisdiction of the United States.

Senator DAWES. Can you think of any other application of it?

Mr. BLACKFORD. That is the only one I recall at the present time. So far as this provision would affect the menhaden fishermen, to destroy or remove their fishery beyond the 3-mile limit, I am not qualified to speak practically. That is a matter on which they can inform you better than I can.

Mr. D. T. CHURCH. Mr. Blackford, I wish you to state something about the spawning of the menhaden. What was the tendency of the evidence that you found in relation to the spawning? Do they not spawn late in the fall?

Mr. BLACKFORD. So far as I can recollect, without having the notes before me, we found the fish largest with spawn along in October and November. The fish that were caught early seemed to be entirely stripped as though they had just recovered from the act of spawning. The fish that were caught very late had all of the appearance of approaching ripeness. We never yet have had any menhaden that showed the spawn actually ready for spawning, but later in the season, and I think it was in the latter part of October or possibly the first of November, we found the specimens of menhaden that were sent to us very large with spawn. We had some sent to us from eastern waters in the vicinity of Rhode Island or Massachusetts that showed that, and we also had some from the coast of North Carolina that showed the same indications of the approach of the spawning season.

Senator DAWES. That was in the fall?

Mr. BLACKFORD. Very late in the fall.

Senator DAWES. Do you infer from that that they spawn in the winter.

Mr. BLACKFORD. No, sir. I think possibly that the fish spawn very early in the spring.

Mr. DE GHEQUIER. They are in that condition when they are going south.

Mr. BLACKFORD. They are in that condition when heading south. I am not entirely convinced that all these schools of fish that we speak of coming along the coast from south to north and then turning and going back actually do so. I think large numbers of fish that we think do that go off into deeper water. We know that shad do not go south. We know that shad lie off in the ocean close to the mouths of rivers.

Senator DAWES. Do you infer from the condition of these fish that they are seeking in the fall their spawning home?

Mr. BLACKFORD. Yes, sir; I do. That would be the natural inference from what we know of the habits of the spawning fish; that when a fish is so large with spawn, whatever direction it may be heading, then, of course, it must be towards the grounds where its instincts take it for the reproductive process.

Senator DAWES. And they are never headed inshore in that condition?

Mr. BLACKFORD. That I am not qualified to speak of, not having seen the fish.

The paper referred to by Mr. Blackford is as follows:

Is legislation necessary for the protection of the ocean fisheries?

[By Eugene G. Blackford, Commissioner of Fisheries, State of New York.]

One of the questions that frequently perplexes the mind of the fish culturist and the legislator is, how to protect in the best manner the valuable food fisheries of the seacoast and ocean.

On the one hand, there are the market fishermen, who use sailing vessels and work either in the deep outside waters, or, with net and hook, gather their prey along the shores and in the bays of our coast. This industry gives employment to over eighty-five thousand men and a capital of over \$30,000,000.

On the other hand, we have the large fleet of steamers that patrol the ocean catching the menhaden, and from them manufacture oil and fertilizers, an occupation involving nearly \$3,000,000 and giving employment to over two thousand men. These facts give some idea of the magnitude of the interests involved and of the importance of the question under discussion.

For the last five years a large number of the former class of fishermen have claimed that the steamers seriously affected their business, stating that many kinds of fish that were formerly abundant are now scarce, and that, unless laws are passed prohibiting the menhaden steamers from fishing within 3 miles of the shore, or in some way restricting their operations, many kinds of the valuable fishes will be exterminated or driven from our shores. In pursuance of this idea they have petitioned both State and national legislatures to that effect.

The question has been largely discussed by the press, the State and National fish commissions, and in the United States Senate. The latter has appointed a Committee on Fisheries, with Hon. E. G. Lapham as chairman. This committee has for the past two years taken the testimony of all classes of fishermen, and obtained the views and theories of fish culturists and ichthyologists. And, in addition to this, we have the valuable information and statistics gathered with great care by Prof. S. F. Baird, the eminent Commissioner of Fish and Fisheries of the United States.

It has been my privilege to assist in obtaining information on the subject for the Senate committee, the United States Fish Commission, and the New York State fishery commission, and I have read with great interest all of the evidence that has been taken by them bearing on this subject. And now, in discussing the question as to the advisability of any legislation to protect the ocean or sea fisheries, it is best to look over the facts which have thus far been brought out and see what would be the best way to provide for the continuance of the abundant supply that we now enjoy.

The first thing that we want to ascertain is whether what we know as salt-water fish, are scarcer now than in former times, and I would say here, that the absence of statistics covering any considerable space of time makes an answer to this question somewhat difficult, but, thanks to the New York Fishmongers' Association, and to the Boston fish bureau, a beginning has been made to supply this hiatus, and it is hoped that the National Government will very soon take definite measures for the purpose of getting, annually, correct statistics of the amount of fish caught in the waters and on the coast of the United States. Having been a dealer in fresh fish in Fulton Market, New York, for the past seventeen years, I have had the opportunity of noticing during this period the varying supply of various kinds of fish, and I beg leave to submit my views as to the scarcity or plentifulness of these various species.

First and most important of all our fishes is the cod. I believe that there has been no considerable diminution in quantity in the last decade, judging from the quantity brought to market and the prices obtained; and as some indication of the range of price, I may say that during the year 1883 cod sold as low as \$1 per hundred weight. In some years there has been a perceptible decrease in the catch, but it has been followed by such enormous catches that the markets have been glutted. The statistics of the Boston fish bureau show the catch of the New England fleet to be: For 1881, 775,027 quintals; for 1882, 898,904 quintals; for 1883, 1,061,698 quintals, showing an absolute increase in two years of nearly 300,000 quintals. Surely these figures need not occasion any alarm or fear that codfish cakes will be beyond the reach of the most impecunious fish culturist.

Next, and hardly second in importance, is the bluefish. It is a matter of historical record that these fish disappeared entirely from our coast in the year 1764, and did not make their appearance again for several years, and then they were taken in vast numbers. Suppose such a disappearance should take place this summer. How quickly the fishermen would appeal to the legislatures to abolish the menhaden steamers, and the angler would cry out for the destruction of the pound and trap nets. Each would probably claim that the scarcity was owing to these instrumen-

talities. This one instance of the bluefish in 1764 should lead us to be careful and conservative in regard to legislation, and to carefully consider whether there are not some great natural laws that determine the appearance and disappearance of fish on our coast, rather than attribute it to the comparatively puny efforts of man to affect the supply.

But let us turn to the question as to their present apparent scarcity or plentifulness. During the year 1882 bluefish were scarcer than they had been for some years, and the wholesale price did not go below 5 cents. This scarcity was particularly noticeable on the New Jersey coast. But the season of 1883 was unusually productive, and bluefish sold as low as $2\frac{1}{2}$ cents per pound, and, had it not been for the large quantities that were taken out of the market and stored in refrigerators for winter use, the price would have declined to 1 cent per pound.

It would seem to be a fair inference that the bluefish needs no protection at present.

The fresh mackerel is another important factor in the food supply of the people. It has attracted a great deal of the attention of fish economists, and it is one of the fishes in regard to which, through the statistics of the Boston fish bureau, we can speak somewhat intelligently.

In 1825 the New England catch was 260,000 barrels; in 1826, 160,000 barrels; in 1827, 200,000 barrels; in 1828, 240,000 barrels, and in 1831, the largest quantity on record was taken, amounting to 390,000 barrels. After this wonderful catch the number steadily declined until the year 1840, during which season only 55,000 barrels were taken. In 1851 there was another wonderful catch of 330,000 barrels; in 1859, only 100,000 barrels; in 1863, 310,000 barrels; in 1868, 180,000 barrels; in 1870, 320,000 barrels; in 1877, 110,000 barrels; in 1880, 245,000 barrels; in 1881 and 1882 the number is the same, 260,000 barrels; in 1883, 160,000 barrels. These figures, covering a period of fifty-eight years, would seem to indicate that their plentifulness or scarcity is not governed materially by the purse seines of the Gloucester fleet.

In my own experience in the New York markets I have just seen such fluctuations in the quantities brought to that city, and whenever there occurs a bad season the fishermen and others interested talk of the probability of the mackerel being all caught up, and of the necessity of some protection for the mackerel fisheries.

The opening of the present season has been a remarkable one. The first vessel arrived March 24, and the mackerel were so small that the captain refused to take off his hatches to show the fish, and insisted on selling them "unsight unseen," and he was fortunate enough to find a purchaser on those terms at $2\frac{1}{2}$ cents each. There were something like 100,000 fish in the load, and they were so small that it took five of them to weigh a pound. The firm that bought them succeeded in selling a few hundred at 4 cents each, and then the price rapidly declined, until the larger portion of the cargo was sold at 50 cents per hundred. About that time the unfortunate buyer called my attention to the fact that it was a great shame that such small mackerel were caught, and that Congress ought to pass a law to prohibit such a wicked waste.

The first load of mackerel was followed by several loads with fish a very little larger in size, but about the 20th of April a new school made its appearance, the average weight of the fish being about 1 pound each, and at least 1,500,000 of this size have, up to the present time, been marketed, and a large portion of them have been sold as low as 2 cents each.

The porgy, or, as it is sometimes called, the scup, is another important fish that furnishes abundant and cheap food, and about which considerable controversy has been had during the past few years, between the net men on one side and the hook-and-line men on the other, the latter claiming that the pounds and traps of the former were exterminating these fish, and efforts were put forth to have laws enacted that should restrict or abolish pound and trap fishing. But nothing came of such endeavors. This was in 1871, and fishing has been carried on in the same manner ever since, and in the New York market last week porgies sold as low as 75 cents per barrel, or about one-half a cent per pound.

I might continue on through the list of food fishes, and occupy your time, and possibly your attention, but I think I have said enough on this branch of the question.

Now, let us consider the menhaden fisheries, against which is brought the charge that they are prosecuted to such an extent, by both sail and steam vessels, that they have materially decreased the numbers of menhaden and seriously impaired the catch of food fishes. You will find, by referring to the reports of the United States Menhaden Oil and Guano Association, that in 1875, with 283 sailing vessels and 25 steamers, 492,878,000 fish were taken; that in 1881, with 286 sailing vessels and 73 steamers, 454,192,000 fish were caught; and in 1882, with 83 steamers and 212 sailing vessels, only 346,638,000 were caught, and last year, 1883, with 136 sail and 69 steamers, there was the enormous catch of 613,461,000 fish. These figures, taken in connection with the statements that have been made to me by captains of merchant vessels, and fishing smacks, that during the fall of 1883 they sailed through miles of menhaden, would warrant the belief that this fish is very far from being exterminated, and that,

with them as with the food fishes that are taken for market, there are seasons of great abundance and seasons of scarcity, and that up to the present time these seasons have not been affected, either one way or the other, by human agency.

Another significant fact is, that during the early part of the menhaden season of 1883, and up to nearly its close, the fishing was so poor and unprofitable that the fishermen themselves began to think they had "killed the goose that laid the golden egg," when all at once the fish appeared in countless numbers, and in a few days they had taken enough to turn what had promised to be a most disastrous season into one of large profit to all concerned.

Now, having presented these facts to you in a crude and disjointed form, permit me to say, in closing, that although what are known as the hook-and-line fishermen, almost without exception, testify (and I believe truly) that they find their occupation and means of living seriously impaired; yet from my experience and observation in the markets, I believe the facts to be that, with the exception of striped bass and lobsters, all kinds of sea food fishes are as abundant now as they were fifteen years ago; and believing this, I am forced to the conviction that any legislation looking to the restriction of the fishing by the menhaden fishermen is unnecessary, and that any laws prohibiting pound and trap net fishing would cut off a large proportion of abundant and cheap food for the people, and nothing would be gained.

But I do hope that Congress will take some action that will provide for the collection of statistics as to the quantities of fish taken, so that in future, when questions affecting these vast industries come before them, they will then be able to frame legislation that will protect the fisheries and not oppress the fishermen.

Mr. ENDICOTT. I would like to ask Mr. Blackford to state whether in his opinion the pollution of the waters by gases and oils has a detrimental effect upon the fisheries.

Mr. BLACKFORD. That is a question which, I believe, received some attention at the last meeting of the association in the Cooper Institute, New York. On that occasion some action was taken, which looked towards a petition for legislation to prevent the pollution of the water. I think it was admitted by all that it had been a source of great detriment to the fishing in our bays, and especially in New York Harbor. I will quote from the report of the association for 1883, page 75:

"Mr. BENKARD. I would like to bring up the subject of the pollution of our waters, which brings many of our fish cultural efforts to naught. I would respectfully offer the following:

"Whereas it is the sense of this association that the continual and increasing pollution of the waters of New York Bay from the refuse of certain factories threatens eventually to kill or drive away all fish, shellfish, and bivalves natural to said waters: Therefore—

"*Be it resolved*, That this association beg to call the immediate attention of the fish commissioners of the States of New York and New Jersey, also of the members of their legislatures, to this impending calamity."

I seconded that resolution and made a few remarks to the effect that a great many fish, which had formerly been abundant in the bay, were no longer to be found there. Striped bass, and particularly lobsters, had been driven out entirely. These latter used to be taken abundantly on the Jersey flats. Shrimps, too, which were very numerous and formed food for larger fish, were almost exterminated, and what few remained were tainted with a flavor of kerosene. Oysters and clams have been killed by thousands in the vicinity of Rockaway. The water has been so polluted by the factories of Barren Island as to render a number of oyster beds, that used to be considered valuable, of no importance whatever. I think, though I am not certain, that the New Jersey legislature has taken some action, and I am of the decided opinion that if our association moved in the matter, legislation could be brought about which would be able to control this matter at least in our own State of New York.

MEMORIAL SUBMITTED BY J. BOOKER.

JOHN BOOKER (of Hampton, Va.). Mr. Chairman, I am charged with the duty of presenting to you the petition of James S. Darling, of Hampton, Va., who is engaged in the menhaden fishery. I will read it:

To the honorable members of the Senate and House of Representatives of the United States of America in Congress assembled:

The petition of James S. Darling respectfully represents that he is a citizen of the town of Hampton, county of Elizabeth City, State of Virginia; that he is at present, and has been for the last eight years, engaged in the taking and catching of the menhaden fish, for the purpose of manufacturing the same into oil and fish-guano; that

his place of business, consisting of factories, drying floors, storage houses, quarters for hands, boats, tackles, nets, etc., is located on a barren sand hill, never before used for any other purpose, at the mouth of Back River, on the Chesapeake Bay, in said county and state; that he has expended in and about the erection of said buildings and apparatus a large sum of money, to wit, the sum of \$45,000; that the said property is utterly useless for any other business or purpose than that for which it is now being used, and, if forced upon the market, your petitioner would hardly realize from the sales of the same the sum of \$1,000; in truth and in fact it would be almost worthless.

Your petitioner further sheweth that he employs in carrying on said business one hundred and sixty-five hands, all of whom have been trained to this business, and whose families are entirely dependent upon this enterprise for a livelihood.

Your petitioner further sheweth that he expends annually in cash, in the county of Elizabeth City, from \$40,000 to \$50,000, by which said expenditures many of the poorer classes are greatly benefited.

Your petitioner now shows that there is pending before the Senate of the United States a bill known as "Senate bill No. 227," having for its object the protection of fisheries on the Atlantic (a copy of which is herewith filed).

Your petitioner further shows that should said bill become a law, owing to the nature of said business, the same being always situated in isolated spots, that his said property would be entirely worthless; in fact and in truth the passage of such a bill would be virtually to confiscate the entire property of your petitioner, and leave him, after eight years of hard work, almost destitute; that one hundred and sixty-five citizens of his county will be thrown out of employment, who are entirely unfitted for any other occupation, and that women and children will be left in a destitute condition.

Your petitioner is advised that the passage of the said act, proposing, as it does, to legislate upon the subject of fisheries in waters lying within the jurisdiction of the States, is unconstitutional.

Wherefore your petitioner prays, first, that the said bill may not become a law. But should Congress, in its infinite wisdom, see fit to pass such a law, that they, at least, make provisions in said act for the payment of such property as would virtually, under the provisions of said bill, be confiscated.

And your petitioner will ever pray, etc.

J. S. DARLING.

Senator DAWES. Where does the petitioner reside?

Mr. BOOKER. He resides at Hampton, in the State of Virginia, on the Chesapeake Bay. There are a great many factories that come under that same head.

STATEMENT OF D. T. CHURCH.

D. T. CHURCH (of Tiverton, R. I.). Mr. Chairman, as I come here as the representative of the menhaden interest, I suppose I may now say a few words as to what we are capable of proving in relation to this question.

In the first place, we start with the statement that we are not in any sense an enemy to a food fisherman; that our taking of menhaden does not have any effect whatever on the fishing for food fishes, and there is not a particle of evidence to that effect and never has been. It never can be produced to show that we affect in any way the taking of food fish on this coast. We are prepared to prove that. We will take as an illustration any fish that you may mention on the southern coast of New England, whether it is a codfish, a mackerel, a bluefish, a tautog, or any other fish. We have the evidence, and can give it to you square and straight if you want it, for the evidence is within our reach.

Senator DAWES. Do you mean that none of these fish feed on the menhaden?

Mr. D. T. CHURCH. No; what I mean to say is this, in short, that the appearance and disappearance of fish, whether it is a menhaden, a scup, a codfish, a mackerel, or a bluefish, anything of that kind is from natural causes, and that man has nothing whatever to

do with it. We can give you information showing that there is no fish, whether the codfish, the mackerel, or any of the varieties I have mentioned, but what has come and gone within the last forty years, two or three times. We can produce evidence to show there are fish that have made their appearance and lived on this coast for years and then have disappeared entirely, and not one been seen for twenty years.

In connection with this I will call your attention to one fact, which I think should settle the whole affair. This question was under discussion some years ago, and the people on the New England coast and on the New Jersey coast and down in Virginia were very much stirred up about it. About 1870, Mr. Dawes, if I remember aright, was the man who, in connection with that controversy, introduced a measure here appointing the United States Fish Commission to investigate the subject. After mature investigation by a set of men appointed by the Government of the the United States to settle this question that has been agitating the country for the last fifteen or twenty or twenty-five years, it has been conclusively determined, and the figures given to show, that man is not an enemy to a salt-water fish. Take the bluefish, for instance; they destroy all food fish that they can. Mr. Baird says that the bluefish alone in one year destroy 150,000,000 tons of fish, and he gives that as a low estimate. The menhaden fishermen, by the figures, for the last ten or fifteen years have taken 200,000 tons a year of these fish, which is in the proportion of 1 fish in 750. Instead of going into any extended defense, we produce this one fact, that the United States Fish Commission, which the Government of the United States has spent two or three million dollars upon to settle this question, make the statement that as to destroying fish the bluefish alone destroy 750 where we destroy 1.

The CHAIRMAN. Is that statement in regard to the bluefish general, or does it merely apply to our coast?

Mr. D. T. CHURCH. It applies to our coast within Professor Baird's observation; it applies to the coast that he goes on. Now, take another fish, which is the scup in New England, to give you a short history, and give you the point of just where this argument comes. The scup by history of the country was coeval with the whites coming into New England, in Massachusetts and Rhode Island. Massasoit, the Indian, entertained the first white man the Indian met by feeding him on a scup or porgy. When your father and my father, the old standbys, came on deck there was not a scup known in our waters. Before the year 1800 they were gone before there was ever a trap or a purse net set in the United States or thought of. The scup disappeared from the waters of New England. When Thomas Jefferson was elected President in 1800 the scup again made their appearance and were called the Jefferson fish for that reason—Democratic fish, because they came in in the year 1800. From the year 1800 to 1867 everybody could catch just as many scup as he chose at any place in Narragansett Bay.

Senator DAWES. You mean up to 1861.

Mr. D. T. CHURCH. In 1867 it was when the scup disappeared again.

Senator DAWES. I thought it was when the Democratic party disappeared. (Laughter.)

Mr. D. T. CHURCH. The scup, as I say, by 1867, had begun to grow scarce. Before that time anybody could catch a scup where he saw fit. You could go to into Narragansett Bay, put your line and hook overboard, and catch plenty of them. In 1867 the scup began to grow scarce, and by 1870 they were gone. Then these came in and then

arose the contest which was the foundation of the United States Fish Commission. An application was made to the legislature of Rhode Island to pass a bill, and Spencer F. Baird was one of the parties who drew the provisions of the bill. It was confiscation without judge or jury. I was in the business then; had my gear; my means of livelihood was in the business. We went before the legislature to fight for bread and butter, and by a chance Mr. Stevens, who was a fisherman himself, was lieutenant-governor and presiding officer of the senate of Rhode Island, and he defeated that bill. We have the record that Spencer F. Baird says that if that bill had been passed in 1867 or 1868 or 1869, when they tried to pass it, all the tendency of legislation in the United States would have been exactly opposite from what it is to-day, for the reason that in 1870 free fishing was allowed—anybody was allowed to fish where he saw fit. The scup, from a product of 100,000 barrels, went down to a product of less than 1,000 barrels. People who had been fishing there for a lifetime could not catch scup in Narragansett Bay. After 1870 the scup came on again, and in 1874 there were more scup on the southern coast of New England than ever was known in the history of the business. There were over 100,000 barrels taken in one year. There were only 1,000 barrels taken in 1870, and in 1874 there were over 100,000 barrels taken in the vicinity of Newport, showing that by allowing the fish free access to the coast things come out right.

That illustration I could repeat over and over again as to other fish. I could give you the sea bass; I could give you the mackerel; I could give you the tautog; I could give you the very fish that Senator Sewell speaks of, the weakfish. For instance, the other day I went into a place in Boston where a man was down square on this thing. He took the ground that we were the enemies of the fish. We talked it all over for a little while. The man said: "Mr. Church, do you recollect that in 1870 the squeteague came onto our coast, which they had not done for thirty years?" When I was ten years old the men who were on the deck would catch a boat-load right in Narragansett Bay. It was a common thing to catch the squeteague or weakfish, but I never caught one in my life with hook and line in Narragansett Bay. In 1870 that bay was literally crammed with them; you could catch them by the hundreds of thousands of tons. They were so plentiful that they did not ship them to New York, because it would not pay to take them out of the water and put them in a box. We can take every fish of that kind on the southern coast of New England, and give you practical illustrations of it if you want them, but if you do not want them we will not give them.

The CHAIRMAN. Please state the conclusions you have formed.

Mr. D. T. CHURCH. The conclusion I have formed from observation is this: That the supply and plentifulness of fish is from natural causes which man knows nothing about.

The CHAIRMAN. Does that apply to all fish?

Mr. D. T. CHURCH. To every fish; for instance, we go into this fish question—take it as a matter of history. We go to Sweden or go to Norway; there they have a record of over fifteen hundred years of the fish business. We can go to work and show you that there is a city on the coast of Norway of over 10,000 inhabitants that made their livelihood from herring for over a hundred years. We can prove to you that every herring left that vicinity; that the city became depopulated, and they were gone for a hundred years and more before they came back, and when they came back they became just as plenty as they had been be-

fore they left. Man simply gives the fact. I can offer you evidence as to codfish. Men used to fish for cod on the southern coast of New England, but in 1860 or 1861 they went away, because there were no codfish. The codfish were gone, and gone forever apparently; but in 1878 the codfish came onto this coast in immense quantities, and you could catch as many codfish as you saw fit. A man in Rhode Island could go off Newport and catch a boat load of fish. A 12 foot boat could go out and you could fill it with codfish. That applied to all the waters from Cape Ann clear to the capes of the Delaware. In 1878 there were landed in the city of Philadelphia so many codfish that they sold for less than \$1 a hundred. I can produce hundreds of fishermen who did not go fishing because it did not pay to catch them.

In that connection I will make this statement to show just how that comes: The Rhode Island fish commissioner came before the Rhode Island legislature about that time, that very winter of 1878, with an ironclad law, making the statement that they were public enemies of Rhode Island; that they should be restricted and not allowed to catch fish. Then, as a climax to his statement, he said: "Gentlemen, there is no fish in Rhode Island waters; Rhode Island fishermen can not catch fish." When he got through, I said: "Gentlemen, to end this argument, I will agree under contract, and I will put down \$10,000 that I fulfill my contract, that I can produce within one month 100,000 pounds of codfish, every one caught in the waters of the State of Rhode Island, and every one shall be landed for 1 cent a pound in the city of Providence, if the gentleman will put up \$10,000 to the contrary." The gentleman walked out, and that ended the matter. I can give you all these points, and can give you illustrations and evidence in abundance if you want them.

Senator DAWES. What is your opinion as to the policy of the close season?

Mr. D. T. CHURCH. I do not think that is necessary, or, indeed any legislation. Of course, to a certain extent my testimony is interested, because I am a fisherman; but I can give you disinterested testimony—perhaps the highest authority in the world—the British commissioner, Thomas H. Huxley, a man high in the scientific world. He was put on the British commission in 1863, with direct instructions by the Parliament of Great Britain to go into an exhaustive examination of the question whether the fisheries of Great Britain would be destroyed by the improved methods of catching fish—the same question that we have here. The same arguments were used there then that are used here at present. For three years the investigation continued, and after asking sixty-three thousand questions he came before the Parliament of Great Britain, and with the commission unanimously agreed that there was no need of any legislation as to any fish that lived and spawned in the sea; and that is my judgment.

The CHAIRMAN. Have you that report?

Mr. D. T. CHURCH. Here it is.

Senator STANFORD. Have you observed that when one class of fish disappears another comes?

Mr. D. T. CHURCH. It is very apt to be that way.

Senator STANFORD. May not that account for the disappearance of a class of fish?

Mr. D. T. CHURCH. Take the Spanish mackerel; they were on the coast for twenty years, and when they left the bluefish came in. We were down in Maine in the menhaden fishery, and the legislature of that State passed a law against it, and the menhaden left. Of course

the law had nothing to do with it, but when the menhaden left a fish came in called the cayac, and there seemed to be as many fish of about the same species as plenty as the menhaden were on the Great George.

Senator SEWELL. Have you caught them?

Mr. D. T. CHURCH. No, sir; that is outside work there.

Senator SEWELL. The theory of this bill is based on protection within a certain distance of the shore for the hook-and-line fisheries. Why is it a special damage to your interest that we should protect them within 3 miles from shore and give you the rest of the ocean?

Mr. D. T. CHURCH. It amounts to the destruction of the business; there is evidence conclusive on that point from fishermen who know all about it. I know from my own observation that it would amount to the practical destruction of our products to the extent of about three-fourths or probably four-fifths of the fish.

Senator SEWELL. Do you mean that three-fourths of the fish are caught within the 3-mile line?

Mr. D. T. CHURCH. Yes, sir; more than that. This last year a school of porpoises came on to the coast and spread themselves from the capes of Virginia to Sandy Hook. It seemed as though the ocean was full of porpoises. Wherever porpoises are, other fish, no matter whether the menhaden, the bluefish, or fish of any other kind, get out of the way. The porpoises are the scavengers of the sea. The result was that the menhaden, regular fat sea menhaden, went into the Chesapeake Bay and located between the mouth of the Potomac and 40 miles above. That stretch of forty miles on the Potomac was the great place for the menhaden fishing last year, and they were never known there before. If we could not have fished within the 3-mile limit nobody would have had a chance to catch any of those fish, and all the Virginian fisheries would have been destroyed by such a law.

Senator DAWES. If you apply the 3-mile limit to the coast that you know of, and then exclude from the 3 mile limit that of which the States have jurisdiction, what is left?

Mr. D. T. CHURCH. There is not anything left. The United States gives us a license to fish, and that license extends anywhere on tide-water. The law says that coasting vessels and fishing vessels shall have a license; the original law of 1790, I think, was drawn so that we have a right under the license to fish wherever we can.

Senator DAWES. How far does the jurisdiction of the State extend?

Mr. D. T. CHURCH. It does not extend anywhere on the tide-water, so far as fishing is concerned.

Senator DAWES. Not within the 3-mile limit?

Mr. D. T. CHURCH. The United States has full control anywhere where a vessel can float, in any bay, river, or inlet.

Senator ALDRICH. If this bill should pass, and you should be excluded from fishing within 3 miles of the shore, as it proposes, would it be possible or profitable for you to carry on your business?

Mr. D. T. CHURCH. No; it would amount to an annihilation of the business.

Senator SEWELL. You say the State has no right in the matter. Did not the State of Maine pass a law prohibiting this fishing within her borders, and has she not carried it out?

Mr. D. T. CHURCH. It has always been a cloudy line where they run together, but we have always taken the ground, and always won it, that the United States controls the matter. The State did pass such a law, but it is something the State has never been able to enforce.

ARGUMENT OF HENRY A. REEVES (OF GREENPORT, N. Y.).

Mr. REEVES. Mr. Chairman and gentlemen, I know very well that your time is too valuable to be spent in idle or irrelevant discussion, and, therefore, with a view to economy of time by avoidance of mere digression or dispute in the heat of debate, I have committed to paper what I desire to say to you upon the pending bill. I shall hope thereby to make my argument more direct and more compact, if not more impressive.

A single word personal to myself may be a proper preliminary. I am not a lawyer nor a paid attorney or advocate of the interest which, with my associates, I represent before you. Of course there would be nothing improper in being such an attorney, but it is best to be frank in such matters, and I wish it understood that in coming to this hearing I am moved simply by regard to the welfare of the community in which I live—a community very seriously, I may say vitally, affected by the bill under consideration.

Mr. Chairman, I address your committee on behalf of the menhaden fishery, against which a fatal blow is aimed by this bill. Because under it many hundreds, nay thousands, of worthy citizens, resident in greater or lesser numbers along the coast of all the Atlantic States from Maine to the Carolinas, are threatened with loss of immediate employment and the total destruction of their present industrial pursuits, I respectfully ask that you give to this case the attention which its actual importance deserves.

The bill before you, Senate bill No. 227, introduced on December 9, 1885, by Mr. Sewell, has for its nominal object, as expressed in the title, "protection of fisheries on the Atlantic coast." On a careful reading I find that it is wholly taken up with provisions for regulating one particular branch of the sea coast fisheries, and with imposition of penalties sufficiently severe to secure observance of such provisions; and on a still more careful consideration of the import and effect of those provisions I am forced to the conclusion that the bill, whatever its intent, does practically work destruction of the menhaden fishery. A few words may serve to set forth this latter fact so plainly that you will readily see and appreciate its full force.

To take menhaden in quantities available or profitable for use at factories, purse-nets are indispensable; no other means of catching them in either shoal or deep water exists. A prohibition on such nets is an embargo on the business. The fish are migratory, coming northward in early spring and going southward in late fall, inside the Gulf Stream, and apparently moving as the temperature of the water varies. An instinct of food seeking or of spawning brings them toward the coast and keeps them scattered in masses near the land or inside the bays, sounds, harbors, and estuaries indenting the shore from Maine to Florida during the period of their stay. While vast schools and numberless smaller bodies may sometimes be seen over many hundreds of miles within a distance of 1 or 2 miles from shore, it is rare to see any considerable number or large body further from land than this distance of 1 to 2 miles. The great bulk, fully nine-tenths or more, of these fish annually rendered at factories are caught in purse-nets, either inside of headlands or in the open ocean within a mile from shore. No factory does, or ever did, get enough fish taken in the outer ocean over a mile from shore to keep it running for a week. Hence, to stop the use of purse-nets within 2 miles from shore means the absolute closure of the busi-

ness as now carried on by either steam or sailing vessels. Only a few open areas resorted to by the fish, such as the middle part of Long Island Sound, the space between Block Island and Montauk Point, [the wider part of Chesapeake Bay], the wider parts of the Carolina Sounds, etc., would be left available for the fishery, and even if it were practicable for vessels while fishing to recognize and respect the 2 mile limit, it would be utterly futile to try to get in such limited spaces fish enough to make the business pay expenses.

It is therefore the language of soberness and truth to say that the passage of the bill would compel the immediate stoppage of the menhaden fishery—an industry which takes out of the teeming sea a material otherwise waste and valueless and from it makes articles so useful to mankind that their yearly production brings a cash return of millions of dollars. This direct and inevitable effect of the bill should be kept clearly in view. It does not propose mere restriction or useful regulation—it destroys and annihilates. Under it the factories would necessarily close; the capital invested to the amount of \$1,500,000 or more, in buildings, machinery, steamers, boats, nets, and other gear, which would have little or no value for other uses, would be practically confiscated, and the thousands of good citizens either directly employed in the fishery and at the factories, or engaged in other lines of dependent industries, would be deprived of occupation in which they now earn honest livelihoods for themselves and their families.

This is not rhetorical exaggeration; it is not the plea of an advocate amplifying his case for effect; it is a simple, truthful, exact statement of the certain results attendant upon the passage of this bill. Such being the case, the question naturally arises, Why is such destructive legislation proposed? What necessity exists to warrant it? What reason can be given for striking out of existence so important, so useful, and so deserving an industry? Surely, there ought to be a real and commanding necessity in order to justify such an extreme exercise of legislative power. And if there be such a necessity it must needs be susceptible of proof. It must be tangible and real—something which can be measured and weighed in the scales of common sense and fair reason. What evidence that such a necessity exists has ever been or can be produced? I doubt not the good faith or sincerity of those who inspired or who favor this bill, but I believe them to be laboring under illusions which prevent their seeing either the full scope of their own measure or the weakness of the support on which it rests. I invite them to make public the definite grounds of their demand that the menhaden fishery be destroyed; and I respectfully insist that every member of Congress, before he gives his vote to the destruction of any legitimate industry, owes it as a solemn duty to himself and to his constituents, whether directly affected by the bill or not, to be sure that a necessity does exist so great and controlling as to justify such a step.

So far as I have been able to discover, after attentive consideration of this subject for years, there are but two allegations advanced by the opponents of the menhaden fishery to sustain their claim that it ought to be legislated out of existence. This bill, therefore, may fairly be supposed to stand on one or other, or both, of these allegations, which I hope to show you are merely allegations, unsupported by adequate proof. The bill assumes that to destroy the menhaden fishery would afford "protection" to other "fisheries on the Atlantic coast" This could only be possible in one of two ways, which answer to the two central ideas of the allegations referred to.

(1) It is alleged that the taking of menhaden with purse nets involves

the capture or destruction of food fish to an extent which warrants legislative prohibition of the use of such nets. I answer that no single instance has ever been shown of any considerable number of food fish being caught in a purse net, except a few large hauls of chequets or weakfish, which were mistaken by the fishermen for menhaden and were, whenever practicable, carried to the nearest market. Only a few such cases—less than half a dozen in a series of twenty or thirty years—have ever happened; but, even if it had been a frequent occurrence, its effect on the supply of weakfish has not been perceptible, and so far as these fish are concerned no complaint ever fell under my eye. The other surface sea fish which are supposed to feed upon menhaden to any considerable extent, are bluefish, bonitos, Spanish mackerel, pollock, and striped bass. Of these five varieties of edible fish, I confidently assert that there never were any large number taken in purse nets. Certainly, there will be no dispute of this assertion as respects bonitos, Spanish mackerel, pollock, and striped bass. I greatly doubt if five thousand of either or all those fish were ever taken in these nets since their use began in 1852.

The unvarying testimony of the officers and crews of the vessels, both sail and steam, employed in the menhaden fishery is that they do not take enough edible fish of all kinds to supply their own table, and this is not due to indifference or inattention, for the menhaden, as they are dumped into the vessel's hold, are carefully watched, and all eatable fish are picked out. In the volume of such testimony taken before the Senate committee in 1882 this fact is made clearly apparent. Every officer or fisherman examined swore to substantially the same thing—that, with the few exceptions as to weakfish, they had never known any considerable number of edible fish to be taken in purse nets. These men are honest and truthful; I can personally avouch the same general truth. For nearly thirty years I have resided at Greenport, where the menhaden fishery is carried on to a greater extent than at any other port in the State of New York, and, while I have never had a penny of interest in the business, I have been a close observer of its various phases, and I have conversed with hundreds of men engaged in the fishery, questioning them when there could be no possible suspicion of interest to bias their answers, and they have invariably told me that, with the exceptions noted, they had never known any considerable quantity of edible fish to be taken in purse nets.

This testimony extends to the bluefish, the only edible variety about which there could possibly be or has ever been any serious contention. These fish are ravenous, swift, and wide ranging; they are essentially a bottom fish, the main supply now marketed being taken with hooks dropped in deep water, much as cod are caught; but in pursuit of food they rise to the surface, and then show themselves, breaking the water, and at a distance, especially with the sun shining on them, may be mistaken for menhaden. They dash in and out among a school of menhaden, biting and tearing, apparently more in wantonness than to gratify their appetite. Indeed, as those whose business it is to open and clean bluefish for the table will testify, only a small percentage will have in their stomachs any trace of menhaden, while nearly all will have the whole or the partly digested bodies of small fish swallowed entire, including young fish of their own species. Bluefish are provided by nature with strong jaws and sharp teeth; they are dangerous customers to have in the net, which they readily bite in holes, or, what is worse, weaken in places without showing the full extent of the havoc they have wrought. No fisherman would knowingly inclose one of them, and no great number are ever inclosed.

The fishermen do their work in the daylight, and are rarely deceived in the character of the fish they undertake to inclose. When making a set, if on coming close to a supposed school of menhaden they find that the fish are wholly or principally weakfish, mackerel, or bluefish, they give up the pursuit and return to their vessel. Their business is exclusively the taking of menhaden for rendering at factories, and they avoid as far as possible the capture of any other species. Occasionally a few bluefish get wedged in among the menhaden so that they do not reach the net to bite their way out, and they find a fitting finale in the fishermen's mess.

It is emphatically true of bluefish, as it is true of bonitos, Spanish mackerel, pollock, and striped bass, that the menhaden fishermen do not and never did take any considerable number in their nets. And as to such bottom fish as cod, hake, flounders, flat-fish, porgies, or scup, sheepshead, sea bass, tautog, etc., which might feed on menhaden when they have a chance, it is enough to say that they are wholly outside the limits of this inquiry, since purse-nets, except when drawn in some very shoal waters, do not reach these fish; in fact there is no pretense that purse-nets affect the supply of these bottom fish, and there could not well be any such pretense, because it is precluded by the very operation of pursing the net, which lifts its lower line and draws it up over and away from the bottom fish, tons of which might lie inclosed within the circuit of the net without a single fish being caught.

(2) Proof failing on the first allegation, there remains the second, which is, that the operation of the menhaden fishery, especially since steamers have come into use, tends to diminish the chief supply of food for edible species by reducing the quantity available to their need and by scattering it over larger areas, thus driving away from the bays, rivers, harbors, etc., and to greater distances in the open sea, the several kind of food fishes which are supposed to make of menhaden their regular diet. To any one acquainted with the facts as they historically have been and as they actually are, it is not easy to treat this theory soberly, so untenable, if not absurd, does it appear, yet it is undoubtedly held with firm faith by many worthy people, and it is the main reliance of those who, whether they believe in it as a theory or not, support this bill. It must therefore be examined and discussed.

At the outset it should be known that this claim or hypothesis of what they allege to be the effects upon food fishes of steamers in pursuit of menhaden is upheld only by those persons who are directly or indirectly interested in fishing with hook and line, either for local markets and summer seacoast hotels, or to a still greater extent in the way of sport for themselves or for city people whom they take out in boats for a day's recreation on the salt water.

None of the fishermen engaged in the regular business of taking food fish for general consumption join in this outcry against the purse nets; they know its futility and injustice. The men who take fish in ponds, fykes, weirs, or other traps, which are now not only the methods most in vogue, but also the most effective and most scientific methods for supplying to city markets fresh fish in its best condition as food, at first when purse nets were a new contrivance, and especially when they were first used on narrow bays, were inclined to antagonize them; they feared that such nets would be ruinous to their own mode of fishing, and for some years they remained suspicious of the "pesky purse netters;" but further experience has convinced them that there is no interference and no detriment to them resulting from the use of the purse nets. The smack fishermen, who supply the city markets with fresh cod, sea bass,

and even with the disputed bluefish itself, and the large number of fishermen engaged in taking mackerel, have no complaint to make against the menhaden fishermen except that sometimes they can't get all the menhaden they want as bait with which to set their trawls or otherwise to allure their finny prey.

It ought to be further recalled that the section of seacoast on which this alleged damage to hook-and-line fishing is claimed to result from the use of purse nets may be said to be practically limited to the coasts of New Jersey and Long Island. Elsewhere, both north and south, so far as I can learn, there is no serious trouble, and no complaint has been made public. The demand for the destruction of the menhaden fishery is confined to those persons, few or many, who want to enjoy hook-and-line fishing along the coasts of Long Island and New Jersey, and who fancy they would be more sure of a day's successful sport or catch if the bays, rivers, harbors, and the open sea for 2 miles out could be turned by legislation into a fish preserve from which the obnoxious steamers and the terrible purse nets should be rigidly excluded.

Admitting that this fancy of theirs, for which no verified basis of fact has ever been presented, deserves serious attention—and it seems to have so far impressed the committee as to secure, at a former meeting, its partial acceptance and favor for this astonishing bill—its whole foundation is upset by a single established fact, which is matter of record, and does not admit of denial. Bluefish were not accounted of much commercial importance as a food fish until after 1870. For many years they were not seen at all on the northern seaboard, and a generation grew up in such ignorance of the bluefish's superior table qualities that when they again visited their old resorts, and some of them were shipped to market, they could not be sold for more than 1 or 2 cents per pound.

It happens, also, that steamers as a more speedy and sure means of pursuing menhaden did not begin to supplant sailing vessels until after 1870. Yet it is true—indisputably true—that since then the yearly supply of bluefish, as well as of edible fish in general, has steadily increased in New York City markets, and though population has grown rapidly and facilities for transportation of fresh fish to distant points have multiplied, and the use of refrigerator rooms for storage of iced fresh fish has taken large quantities to be kept until out of season, so that the demand for fresh bluefish might fairly be expected to outrun the supply, prices have not materially changed during recent years.

The operations of the menhaden fishermen have extended, the number of steamers has enlarged, and the aggregate catch has increased, yet during this same period of ten or twelve years the bluefish have been caught in greater and greater numbers, and their market price, which is the surest criterion of relative scarcity or plenty, has fluctuated within very narrow limits, averaging but little above what it was fifteen years ago. It thus appears, conclusively, that so far as concerns the question of "protection" to the bluefish which are sold in the main distributing markets of the country, there is no need of any; their number increases and their selling price remains at a low figure, without any legislation.

It follows, that if there be need of "protection" to any kind of "fisheries on the Atlantic coast," it must be the fishery with hook and line out of small boats propelled by oars or sails, either for profit or pleasure; and the only kinds of fish so taken which could be affected by the menhaden fishery are bluefish, chequet, Spanish mackerel, bonitos, and striped bass. The question is pertinent, then, in what way and to what

extent does the pursuit of menhaden by steamers and their capture in purse nets affect these varieties of edible fish?

It has already been shown that none of them feed upon menhaden exclusively or mainly, and that no considerable number of any one or of all of them was ever caught in purse nets, except on three or four occasions.

Such being the case, the presumption must be that the asserted effect of the menhaden fishery upon even those fish which are chummed for or trolled for or otherwise caught out of small boats with hooks and lines can not be important. This presumption can only be overcome by positive proof to the contrary.

The advocates of the bill should be required to produce such proof before the least tolerance is given to their demand for that extraordinary sort of "protection" which involves the destruction of another, a larger, and a far more useful branch of the fisheries. Have they done this? Has a single item of reliable proof from disinterested and competent sources been laid before the fisheries committee, going to show that the clamor against the menhaden steamers has any solid basis? I can not learn that this has been done; I can not learn that any valid testimony from witnesses who speak with positive certainty, and are entitled to full credence, has been submitted in support of this bill. Abundance of ideas and beliefs may have been elicited; opinions naturally vary widely on subjects so recondite and so little understood as the habits and movements of fishes in the great deep. You may have had theories advanced or views expressed by experienced men, and even by scientists themselves, which a larger knowledge and more complete inquiry would disprove; in fact, on the fundamental question underlying this whole agitation—the question of what effect, if any, man's operations have ever had or can have on the quantity of fish in the sea—such leading American authorities as Professors Baird and Goode and Mr. Blackford began their investigations years ago with a prejudice, if I may so speak, against the menhaden fishermen similar in kind if not in degree to the sentiment toward them held by many good people of New Jersey and Long Island; but in their case continued observation and analysis of recorded facts led them to modify their first impressions, and to coincide with Huxley and other naturalists, who affirm that nothing man can do will make any material difference with the coming or going, the scarcity or plenty, of fishes in the sea.

The bill, I respectfully submit, rests upon assumptions and ignores facts. But even if, for argument's sake, this asserted effect be admitted, it is still a legitimate inquiry whether the larger ought to give way to the smaller, the more valuable and more useful to the lesser, the practical and beneficial industry to the quest of sport or pleasure.

The foregoing discussion has, I think, demonstrated that the only kind of "fisheries on the Atlantic coast" which claim to need "protection," and in order to get it demand the destruction of the menhaden fishery, is that which is practically restricted to the coast of two States, and which employs small boats during a few months of the year for taking food fishes with hook and line, largely for sport. This is the actual extent and nature of the need for "protection" which, it is assumed by the bill, warrants and requires the absolute extirpation of an industry foremost among the maritime activities of the American people. Ought there to be the least hesitancy in any honorable legislator's mind as to his duty in relation to such a bill? If the sense of right and justice to which I appeal were not of itself enough to enforce the conclusion that this bill does not deserve any countenance or support from

either house of Congress, I desire to ask your further attention briefly to the economic aspect of this matter.

Aside from the uses made of menhaden for food, either fresh, salted, or put up in oil like sardines, the principal products of the fishery, indeed the only ones which concern this inquiry, are oil and scrap or guano. The oil as now made is a clean, sweet, pure, and limpid article, largely used in the industrial and mechanic arts, and also mixed with other animal oils. There is no way of reaching the precise production of oil and scrap, because no authenticated figures covering the whole field of this industry have ever been reported, but a sufficiently near approximation can be had.

The United States Menhaden Oil and Guano Association was organized in January, 1874, and its local statistical committees, in their yearly reports to its secretary, have included nearly or quite all the manufacturers within their respective districts. From its reports for the thirteen years from 1873 to 1885, both inclusive, it appears that the total production of oil at the factories, so reported, was 31,314,156 gallons, or an average of 2,408,781 gallons each year; that the price of fish oil, which, in 1870, just preceding the introduction of steamers into the fishery, was 60 cents a gallon, has gradually declined, until for 1885 it averaged under 30 cents a gallon; and that a fair average price for the thirteen years would be 40 cents, at which figure the aggregate yield of oil was worth to the manufacturer \$12,525,662.40, or an average of \$963,512.50 each year.

Beside this direct cash value of oil produced from menhaden, amounting yearly to nearly \$1,000,000, the utility of the manufacture to the country in cheapening prices of all kinds of animal oils, and also, to a considerable extent, of vegetable oils, while it can not be computed with exactness, has obviously been very large.

Further light on the importance of this product of the menhaden fishery may be had from a comparison with the importation of whale oil during the same period. As appears from the tabular statements in the New Bedford Shipping List's Annual Review of the Whale Fishery for 1885, it appears that during the thirteen years from 1873 to 1885, both inclusive, there were brought into American ports 12,708,543 gallons of whale oil, which, at the average price for those years of 53 cents, would have been worth \$6,735,527.79; but of this quantity there were exported 2,382,381 gallons, worth \$1,262,661.93, leaving for domestic consumption a total of 10,326,162 gallons, or less than one-third the production of menhaden oil, and a total value of \$5,472,865.86, or less than one-half of that of the menhaden oil made in the same period.

The other product of the menhaden fishery, the refuse left after expressing the oil, is called scrap, pomace, or fish guano. It was formerly used in the crude state, either as a fertilizer applied direct to the land or, to a far larger extent, it was mixed as an ingredient in the manufacture of commercial fertilizers, its large percentage of ammonia making it the most important and active agent in quickening and strengthening the other properties which give such fertilizers value as plant food. Of late years most of it has been sun-dried at the factories, and thereby made more available for carriage to distances and more convenient and efficacious for use. It still remains the chief source of supply of ammoniacal basis for commercial fertilizers, though increasing demand has led to partial substitution of other substances, none of which, however, have taken its place.

From the annual reports of the above association, it appears that, reducing the crude scrap when reported to its equivalent weight in dry

scrap, there have been manufactured at the factories reporting to the association in the thirteen years from 1873 to 1885, inclusive, 610,399 tons, or a yearly average of 46,954 tons. As it is estimated that in a ton of manipulated fertilizer ready for the soil the usual proportion of scrap is one-quarter, it is seen that the factories in the past thirteen years have contributed the ammoniate for 2,441,596 tons of fertilizer, or at the yearly rate of 187,816 tons. As it is usually considered that in growing cotton, for which crop these fertilizers are largely used, 250 pounds are needed to raise one bale, it would follow that if the fish scrap made on an average each year at the factories reporting to the association were all applied to the raising of cotton, it would have yielded a crop of 1,502,528 bales.

A still more striking view of the immense importance to the agricultural interests of this country which the menhaden scrap or guano possesses may be seen if the fact be recalled that since 1870 the large and then increasing importations of Peruvian guano, which sold at \$40 and upwards per ton and took several million dollars each year out of the pockets of American farmers, have been almost stopped, and its place in the economy of fertilizing American fields has been taken by the menhaden scrap. If we assume that without the scrap there would have been need for an equal quantity of Peruvian guano, then the 610,399 tons of scrap would have been worth to growers of cotton, sugarcane, corn, and other farm products, a sum not less than \$36,623,940, or at the yearly average of \$2,817,210. The saving, moreover, effected by this exchange of a foreign for a home-made guano will readily appear from the fact that, whereas the former sold for \$60 or more per ton, the latter has averaged in price less than \$30 per ton.

There are other considerations which might be urged in connection with this branch of the subject; but I have said enough to show conclusively the great economic importance of the products of the menhaden fishery—an importance which runs far beyond the immediate cash return which they bring to their manufacturers—and I do not wish to weary your patience.

I ought not, however, to close without again reminding you that this bill, if enacted, would work a practical confiscation of the capital invested in factories, machinery, drying platforms, scrap-houses, steamers, boats, nets, and other gear employed in the business. Most of this material, machinery, apparatus, and vessel property is adapted to the particular uses for which it is designed, and would have little or no value for any other purpose. To forbid its use in taking and rendering menhaden is therefore to confiscate nearly or quite its entire present value to its owners, who, in prosecuting a legitimate industry, have expended large sums of honestly earned money. They now have considerably over \$1,500,000 in property which this bill would render almost valueless. I therefore insist, as the simplest dictate of common justice, that before the bill becomes law, should such a calamity be possible, it ought to provide for a commission to appraise and award the compensation which should be paid to the owners of this confiscated property.

Such, gentlemen, has been, to my mind, the overmastering import of this bill as dealing a death blow to the menhaden industry that I have not stopped to examine it in a merely critical sense. But a pertinent illustration of its rash and reckless nature is afforded in its second section, which forbids the use of purse-nets “or other appliances” along the Atlantic coast or in any bay, river, harbor, etc., “for the capture of fish to be manufactured into oil or into fish guano or other fertilizing

material." No matter what the nature of the fish from which oil or guano may be made, whether fit for food, like porpoises, or merely predaceous, like sharks, they may not be taken in any purse-net "or other appliance" along the entire Atlantic coast for 2 miles out to sea, where alone they would or could be taken to any advantage, and are thus left to the undisturbed possession of the ocean, "protected" by the American Congress from the enterprise of American citizens who might utilize them for the benefit of themselves "and the rest of mankind." This is to be done over 2,000 or more miles of seaboard, although the source of trouble supposed to require such heroic treatment—the *casus belli* in this war upon legitimate industry—is confined to about 200 miles of coast, and is there a myth or a mere guess, with no solid basis of ascertained fact. To still further exemplify the wholesale folly of this section, it may be stated that on the coast of Maine last year another species of herring, locally known by the Esquimaux term, kiack, were found to yield oil in paying quantities, and two factories manufactured 50,000 gallons of oil and 900 tons of scrap. Under the bill this kiack fishery, on a coast where there is no pretense and hardly a possibility of interference with any other fishery, is to be cut down in its promising infancy in order that Long Branch hotels may hope to have fresh bluefish on their tables continuously and short branch railroads may entice fresh travelers from the interior in quest of promised sport with hook and line.

Finally, with a few words in review of the main point presented in the bill and of the argument I have essayed to make against its passage, I am done.

The only kind of "fishery on the Atlantic coast" that demands any measure of "protection" against the menhaden fishery has been shown to be fishing with hook and line in small boats going out from the shore, mostly in bays, rivers, and harbors, which are clearly within what the lawyers call the *fauces terræ*, and are therefore subject to State jurisdiction. The feeling which inspires this demand is limited to a narrow strip of seacoast, principally of New Jersey, and even there is not shared by farmers and others who do not have a direct concern in the use of boats, or in the business of keeping summer hotels and boarding houses.

These parties in interest, the hook and line fishermen (perhaps not all of them, but a majority), the hotel and boarding-house keepers and the managers of shore lines of railway, have or claim to have become convinced that the fishing which is so great an attraction and so valuable an industry, has been impaired and broken up by the operations of the menhaden fishermen, and in order to be "protected" they ask Congress to pass this bill. They do not adduce any attested and established facts in support of their claim, but when questioned the most experienced fishermen on that coast offer only opinions and beliefs.

Were the steamers to be stopped, as this bill would stop them, other conditions remaining unchanged, there is no evidence whatever that bluefish would be any more plentiful in the waters for which protection is asked. Indeed, only a year ago last August, with all the steamers in full pursuit of menhaden, there came on the Jersey coast such a run of bluefish that at Sea Bright they were reported to have been sold at 2 cents apiece, and for a time, about the same period last year, the bluefish were very plentiful on that coast, as may be seen by the fol-

lowing item clipped from Long Branch correspondence of the New York Times, under date of September 5:

Bluefishing is most excellent now. The fishing banks off the Branch are daily covered with craft of all kinds, and the water is rippled in hundreds of spots by swiftly moving shoals of fish. Many of the young men who are spending their time at the Branch go out through the surf with the fishermen and make fine hauls.

On the other hand, the greatest naturalists of the age, who have spent years in patient investigation of the habits of fish and in study of the history of their movements wherever recorded in the annals of the world, are fully satisfied that man is powerless to make any real or lasting impression upon the great bodies of fish in the sea, and that periods of relative scarcity or plenty prove nothing as to causes that have produced those effects.

Appearances and disappearances of particular species of sea fish on certain coasts have repeatedly been noted in history, and within the present century mackerel and bluefish have left the shores where they had been abundant, and have returned in numbers as great as before or greater; and these occurrences took place long before the menhaden fishery had been begun. Moreover, the number of menhaden yearly manufactured into oil and scrap, great as the figures appear, are but a flea-bite compared with the number annually consumed by predatory fish, birds, and sea reptiles. In the past thirteen years of recorded statistics the average number rendered at factories was 567,423,000; but Baird estimates the total consumption of menhaden in a year by their natural enemies to be three thousand millions of millions; so, if the average number taken by man were to be doubled, it still would be only as one in three thousand millions of those annually destroyed, to say nothing of the still greater numbers who survive.

Even if it be conceded that there is a real and not a merely apparent decrease in the number of food-fish along the coasts of Long Long and New Jersey at the present time as contrasted with fifteen or twenty years ago, if, while the market supply of these fish has more than kept pace with the increased demand, there is a perceptible falling off in the catch at any given point on those coasts, I still ask, in the light of the authentic facts and figures presented and of the deliberate judgment of such eminent scientists as Huxley, Tyndall, Baird, and Goode, is it not a violent and wholly unsustained assumption to allege that the steamers or the purse-nets used in catching menhaden have or can have anything to do with diminishing the supply of fish which are not caught in purse-nets and which do not need menhaden as food, or, of they do, have them in abundance and more widely scattered as a result of their pursuit by steamers. And I again ask, ought legislation of so sweeping and disastrous a character as this bill prescribes to be based on mere assumptions, without any fixed foundation of clearly established fact.

Senator SEWELL. I should like to ask Mr. Reeves a question. Are you engaged in this business yourself or do you appear as counsel?

Mr. REEVES. As I said, I am not a lawyer. I am not the paid advocate or attorney of the menhaden fishery, which I come here in part to represent. I wish it distinctly understood that I came here impelled solely by regard for the welfare of the community among which I live, which community (the village of Greenport) is more largely affected by this bill than any other community in the State of New York, or perhaps any other of equal size in the country. One of its main industries, perhaps the leading industry of that village, is the menhaden fishery, which is conducted by citizens having factories at distances of 10 or 15 miles away.

Senator SEWELL. Associated companies ?

Mr. REEVES. Some of them are and some are individuals. There are some twelve or fifteen of them, but the number in practical operation last year, I think, was eleven or twelve.

Senator DAWES. You stated in the beginning that you had no interest in it.

Mr. REEVES. None whatever. I have never had a penny of interest in the matter ; I have simply been a looker-on. My only interest is because I reside in a community that is so largely engaged in the business, and naturally I have listened to whatever was going on and have learned what there was to be known about it. I have not a knowledge of the practical details which gentlemen who are with me have, and, of course can not answer questions of that nature ; but any question which relates to this inquiry under the terms of the bill I have endeavored to set forth.

The CHAIRMAN. You spoke of millions of dollars being invested in these factories.

Mr. REEVES. A million and a half is the estimated amount, I think.

The CHAIRMAN. You spoke generally of millions of dollars along the coast. I have no doubt there are millions, but have you any idea of how many millions ?

Mr. REEVES. I said a million and a half, judging from the returns made by the Menhaden Oil and Guano Association, from whose reports I have obtained most of my statistical information. As reported in January last, the amount then invested was \$1,400,000 ; but there was a considerable amount of property not employed in the fishery during the year—factories not in use. Probably there are \$300,000, \$400,000, or \$500,000 not included in this report.

The CHAIRMAN. Do you know how many factories there are ?

Mr. REEVES. I have not the statistics of them with me. Some of the gentlemen, I presume, have. One gentleman says fifty-odd factories on the Chesapeake Bay, and about one-third were used last summer.

Senator RANSOM. I do not mean to be officious, but I see in looking over the very carefully written memorandum by Mr. Goode, on page 15, it is said :

In 1878 the menhaden oil and guano industry employed capital to the amount of \$2,350,000.

It goes on and states the number of men and vessels employed and the fish consumed, and then concludes :

The value of the menhaden fishery for this year being \$1,658,000.

Mr. D. T. CHURCH. There are between \$4,000,000 and \$5,000,000 invested, but the returns reduce it to about 25 per cent. on the dollar practically.

REMONSTRANCE OF PERSONS INTERESTED.

Senator ALDRICH presented to following memorial :

To the honorable Committee on Fisheries of the United States Senate :

GENTLEMEN : The undersigned, manufacturers of menhaden fish oil and fish guano and dealers in the same, and others interested in the industry, do most earnestly and respectfully protest against the passage of the bill known as the Sewell fishery bill, which we believe to be unjust in its provisions, inimical to an important industry which the passage of the bill would practically extinguish, entailing serious losses on those engaged therein, while it would subserve no good purpose and prove beneficial to no industry. We believe the bill to have been prompted through a misappre-

hension, and therefore respectfully ask that you make a thorough investigation of the facts, believing that such action on your part will convince you that the bill is unjust, and should not become a law.

Stearns & Company, by Oscar H. Stearns.

P. White's Sons.

Swan & Finch, 151 Maiden lane.

Heller, Hirsh & Co., 164 Front street.

Geo. E. & F. W. White, 159 Front street, New York.

The Mapes Formula and Peruvian Guano Co., by Edward Z. Lane, treasurer, 158 Front street.

Geo. B. Forester (absolutely opposed to the bill) 169 Front street.

E. Frank Coe and Julian D. Fairchild, 16 Burling Slip.

Alfred S. Malcomson, 172 Pearl street.

H. F. S. Chambers, 81 Pine street.

G. T. P. Chambers & Co., 81 Pine street.

George Lowe, 145 Maiden lane.

B. F. Eaton, East Lyme court.

Wakeman & Fiegs, 143 Front street.

Thos. G. Hunt, 137 Front street.

James F. Shay, 18 Fletcher street.

Edwin Swain, 132 Front street.

Nehemiah B. Cook, 148 Front street.

Jasper Pryor, 143 Front street, New York City.

George Delano's Sons, 140 Front street.

Geo. Leonard, 141 Maiden lane.

Louis C. d'Homergue, 35 Murray street, New York.

A. L. Knight, 7 Ferry street, New York City.

L. R. Welles & Co., 14 and 16 Vandewater street.

J. J. Austin, 159 Front street.

Edwin W. Adams & Co., 114 Wall street.

Fidelity Manufacturing Company, Philadelphia, Pa., E. N. Jenkins, secretary.

T. M. Ware & Co., Boston.

Geo. H. Leonard & Co., Boston.

J. D. Loftus & Co., Boston.

Meriam & Morgan Pff. Company, Boston, per Frank L. Young, manager.

Joshua G. Nickerson, Boston.

H. B. March, Boston.

Nathan F. Carruth & Co., Boston.

Henry D. Wilder & Co., Boston.

Atlantic Fertilizer Company, Boston.

A. B. Johnson, Boston.

Elijah Bent, Boston.

Underhay & Co., Boston.

Waite, Williams & Co.

H. L. Macomber & Co.

C. A. Whittemore & Co., Boston.

J. A. Tucker & Co.

H. W. Loveland, Boston.

A. B. Perry & Co.

Bowker Fertilizer Company, by W. H. Bowker, president.

Benj. Bickerman.

George B. Nichols.

Herman Smith.

Adams & Harrington.

Thomas E. Proctor.

John B. Alley & Co.

George F. Putnam.

James Houston & Co.

Arey, Maddock & Locke.

Bradley Fertilizer Company, by Rob. T. Bradley, treasurer.

Cochrane Chemical Company, by Hugh Cochrane, vice president.

Geo. J. Furr & Co.

E. & J. S. Bent.

Loring & Avery.

Geo. A. Hull & Co.

Winston & Co.

A. W. Dodel & Co.

STATEMENT OF JAMES E. OTIS.

JAMES E. OTIS (of New Jersey). Mr. Chairman, I live on what you may call the largest bay there is in New Jersey, outside of the Delaware Bay, and where there are supposed to be a great many bluefish caught. It is the Great Bay, in the counties of Atlantic, Burlington, and Ocean, New Jersey.

In regard to the food fishermen, I would say that we have watering places there on the beach where a great many people from the cities go, and while there catch fish and go gunning. It is advertised as being the greatest place in the known world for that business by the railroad people. At certain periods of the season there are large quantities of good fish there, and at that time we catch all we want and more, too. At other periods we do not catch any. The fishermen are asked what is the cause of it; they give the most ready excuse that comes to their mind, and say the menhaden fishermen have caught them all up.

The CHAIRMAN. Has this been the case for the last fifty years at irregular intervals?

Mr. OTIS. I do not remember as long as that; about twelve years I am speaking of. I know of that.

The CHAIRMAN. But these intervals have existed?

Mr. OTIS. Yes, sir; it is the same way with the menhaden outside. We have been six weeks without seeing any, and then they would strike in and jam up the whole water way.

Senator DAWES. What is the interest that is promoted by this bill?

Mr. OTIS. I do not think there is any in my section of the State.

Senator DAWES. There must be some interest promoted by it or the bill would not come in.

Mr. OTIS. That is about a fair statement. These amateur fishermen when there are no fish there ask the men who take them out what is the cause of their not catching any fish, and they say, "The menhaden fishermen have caught them all up."

Senator DAWES. What is your opinion about that?

Mr. OTIS. My opinion is that when there is a run of fish they get all they want and more, too; but when there are none nobody can get any.

Senator DAWES. What is the effect of taking menhaden by those employed in taking them for fertilizing purposes? What effect has that upon fishing within the 3-mile limit?

Mr. OTIS. The menhaden and most of our fish we catch within a mile of the shore.

Senator DAWES. What is your opinion about its depriving food-fish of their food?

Mr. OTIS. I do not think it has anything to do with it at all.

Senator DAWES. Do you mean to say that in your opinion the catching of the menhaden as it is carried on now does not affect fishing with a line within 3 miles?

Mr. OTIS. No, sir; most of the fishing we have with us with hook and line is not outside but inside in the bay.

Senator DAWES. Within 3 miles?

Mr. OTIS. The bays are inland—inside waters.

Senator DAWES. Are the menhaden taken inside?

Mr. OTIS. No.

Senator DAWES. Then, if this bill should prohibit the fishing for menhaden within 3 miles, what harm would it do to the menhaden fishing?

Mr. OTIS. It would kill the business.

Senator DAWES. How would it if you do not take them within 3 miles ?

Mr. WHARTON. The State law of the State of New Jersey forbids such fishing within the bays. It does not undertake to say anything about the fishing outside the coast line, but within the bays it is prohibited.

Senator DAWES. Does it prohibit all fishing ?

Mr. WHARTON. It prohibits all menhaden fishing within the bays. Almost all the menhaden fishing is done where Mr. Otis says—outside, of course, because they are not allowed to fish inside ; but nine-tenths of the fish caught in New Jersey are caught between the shore and the 3 mile limit.

Mr. OTIS. Caught within a mile of the beach.

Senator DAWES. Then, you mean to say that this bill would prevent the catching of menhaden as it is now carried on ?

Mr. OTIS. Yes, sir ; it would kill the business. The bill, as I understand, makes a line. We would suppose that a man would pretty nearly go through a 9-inch mesh if he was not too large. The menhaden are small fish.

Senator DAWES. What is the size of the mesh that menhaden are taken with ?

Mr. OTIS. Two inches, or a little more.

Senator DAWES. This bill absolutely prohibits menhaden fishing within the limits prescribed in the bill ; and that prohibition you say would have the effect to kill the business ?

Mr. OTIS. Yes, sir ; it would kill the business.

The CHAIRMAN. Whom is this bill intended to benefit ?

Mr. OTIS. That is what we should like to find out. I have talked with the people along that shore, and I can find but very few who know anything about the bill.

Senator DAWES. Are you acquainted with the fishermen on the shore who contribute to the supply of the New York market ?

Mr. OTIS. No, sir.

Senator DAWES. You do not know where they get their fish ?

Mr. OTIS. No.

Senator DAWES. Do you know where the men get their fish who fish with a line and carry the fish to the market of New York and other markets ?

Mr. OTIS. They get them in those inland waters that I mentioned.

Senator DAWES. Are they in favor of this bill ?

Mr. OTIS. Not that I know of.

Senator DAWES. Are you acquainted with them ?

Mr. OTIS. Yes, sir.

Senator DAWES. Have you conversed with them about this ?

Mr. OTIS. Yes, sir.

Senator DAWES. What do they say ?

Mr. OTIS. They are as much opposed to the bill as it stands now as we are, for this reason : As I said before, these amateur fishermen go out and if there do not happen to be fish there so that they do not catch any, they ask the reason, and the boatmen tell them the menhaden fishermen have caught them all up. That has been the cry, and now they say this bill has been introduced with, perhaps, a possibility of its becoming a law, and they are as much worried about it as the menhaden fishermen, because they say if it does become a law here are three hundred men in the county of Burlington that rely on menhaden fishing for a livelihood who will go right in and go to fishing with hooks and lines and compete with them and take their living away from them.

STATEMENT OF C. H. PARSONS (OF GLOUCESTER, MASS.).

Mr. PARSONS. Mr. Chairman, I come from a big fishing town, and I believe there were some people last week before a committee fighting a reciprocity treaty. I represent the oil business. I am not in the menhaden fishery, but I buy their product together with the codfish product. That is our whole business. We sell our product to the tanners and curriers, and such like. I claim that if this bill passes it will entirely obliterate the menhaden fishery and will injure the tanning interest. Of course, as you well know, tanners have to have oil and grease to put into leather, and they are always after cheap greases. The result of the menhaden fishery has been to keep tallow and grease down to a figure where the tanners can use them and manufacture the leather to advantage. If we now have this bill passed and take out of the market 50,000 barrels of oil (for that is about the average of what the menhaden fishermen catch, as near as I can estimate) it will make grease of all kinds go up, and tallow will go up. It is now $3\frac{3}{4}$ cents a pound, and that is the cheapest known, and other greases are in the same proportion.

If this is taken out of the market entirely instead of paying, as to-day, 35 cents a gallon for cod-oil for tanners' use, we shall be obliged to pay 50 cents and more a gallon for it. We can not afford to pay those prices. Now, this is a competition with tallow. Of course, tallow will not advance a great deal, because tallow now, as they are killing cattle for hides and meat, is increasing and the consumption of fish oil is decreasing amongst the tanners. All that will induce the tanners now to use fish oil, and, of course, what they use helps the fishermen so much, and it is used because of the cheapness of the article.

Senator RANSOM. Will tallow or anything else answer the purposes of the tanners as fish oil does?

Mr. PARSONS. It will. We import a grease from Europe that has taken the place of fish oil somewhat, and cheapened the price somewhat.

Senator RANSOM. You import that from Europe?

Mr. PARSONS. Yes, sir.

Senator RANSOM. You have it not here?

Mr. PARSONS. We have it not here.

Senator RANSOM. Is it as good as the fish oil?

Mr. PARSONS. It is.

Senator RANSOM. How many barrels of oil do you get from this fishery?

Mr. PARSONS. I should judge, in round numbers, about 50,000.

The CHAIRMAN. What do you mean by that?

Mr. PARSONS. That is what the menhaden fishery produces.

The CHAIRMAN. Altogether?

Mr. PARSONS. On the Jersey coast and on the Sound coast.

The CHAIRMAN. That includes the whole coast of the United States, so far as you know?

Mr. PARSONS. As far as I know. Some years it may be less and some years more, but I should think 50,000 barrels would be a fair estimate of what the product is.

The CHAIRMAN. What is it worth a gallon?

Mr. PARSONS. It is worth to-day 30 cents. It was bought this season for 25 cents. That is about the average price of the product this year—25 cents a gallon. It has gone up a little now. Furthermore, this oil is refined and it is largely used in the mines for burning-oil in lamps

Miners can not use petroleum oil of any kind in their lamps on account of the explosive nature of it; therefore they have to use fish oil, and it is refined and a large consumption is taken there.

The CHAIRMAN. Is that the commercial name of it—fish oil?

Mr. PARSONS. Yes, sir, fish oil; as far north as the whole fishery goes. I know a little something about that. I have dealt in it in the menhaden field; it is called "slivers." They used years ago to sliver the fish, but that was before they used to press them so much for oil. They cut off each side of the fish—we call it a sliver—leaving the backbone intact. That we used to salt and barrel up the same as mackerel, to be used as bait for the cod fisheries. It is done so yet, but not to so large an extent as formerly. Now they use more phosphate, and our vessels go to Newfoundland and get fresh herring and bring them home iced up, frozen, and kept in a box and then broken out and sold to the fisherman for bait, fresh bait, to go on the banks fishing. At times they can not get herring from Newfoundland, and therefore they have to resort to porgies, as we call them, which are used with menhaden for bait to take its place. They are largely used in that way. Therefore, if this bill passes it will prohibit our fishermen from getting any bait, and that would kill their business as far north as the shore fishing goes to get fish, haddock, and such like.

The CHAIRMAN. There permit me to ask you, Mr. Parsons, what amount in full does this bait product amount to?

Mr. PARSONS. It would amount to as much as they wish to use.

The CHAIRMAN. But how many dollars in a year do you estimate it?

Mr. PARSONS. I can not tell you.

The CHAIRMAN. What proportion of the bait do they use?

Mr. PARSONS. We have sold ours when we had to salt them and sliver them as high as from eight to ten thousand barrels a year. I suppose in Gloucester there have been used as high as five thousand barrels a year of menhaden.

The CHAIRMAN. At how much a barrel?

Mr. PARSONS. We used to get from \$4 to \$7 a barrel for the bait.

The CHAIRMAN. But you do not know the aggregate?

Mr. PARSONS. No; to-day I should judge fresh bait would be worth——

The CHAIRMAN. But the aggregate amount?

Mr. PARSONS. I do not know.

Mr. D. K. CHURCH. A half million dollars at least, I suppose, is expended for bait.

Mr. PARSONS. These vessels go to George's fishing there, and they get the largest supply of codfish for the Boston, New York, Philadelphia, and Chicago markets. Something like 100 sail go from Boston. About half of these belong to Gloucester and about a third to a quarter or more belong to Boston, called the Irish boats, and the balance belong on the south shore about Provincetown. They go on George's now and feel for the fish there, and they use all this fresh bait. That is where your markets are supplied from. They are not supplied from the Jersey coast or Block Island shore, for the few fish got at Block Island in the winter season would not supply a small village with fresh fish. The main supply is drawn from George's, and they must have this fresh bait to fish with.

I cannot see for the life of me that the menhaden fishery injures any food fishes at all. It is rather a benefit to them. Certainly in our business it would be a great detriment to us to have the menhaden taken off the market. We could not carry on our business and be confined to the

ports of Gloucester and Provincetown. That is the only source we have to buy our oil in. We should have to buy then, of course, nothing but the cod oil of the provinces. If the bill passes and the duty is kept on oil it takes that market out of us. The duty there is 25 per cent. ad valorem, and that amounts to about 10 cents a gallon, and we can not furnish them oil down there and make a profit. Therefore it is very essential that this fishing should go on as it is, and that the tanners should have their oils and greases as reasonable as possible.

Senator SEWELL. Are you engaged in menhaden fishing?

Mr. PARSONS. No, sir; I am engaged in the oil business, and have been for twenty years, buying the oil product of the cod fishery and the menhaden-fishery.

Senator SEWELL. Are you familiar with the oil product of the menhaden fishery?

Mr. PARSONS. I am familiar only in this way, that I have visited their factories time and time again, and am acquainted with the oil.

Senator SEWELL. Will you give us the locations of the factories north and south along the coast where they are?

Mr. PARSONS. I can not give the exact localities of them. I have followed them on Long Island, at Green Point, Barren Island, Fire Island, and at Tiverton, in Rhode Island.

Senator SEWELL. They run from Rhode Island to Cape Henry?

Mr. PARSONS. Yes, sir.

Senator RANSOM. And below Cape Henry?

Mr. PARSONS. I never saw them below Cape Henry.

Senator SEWELL. Do you know the proportion of menhaden caught between Sandy Hook and Cape May?

Mr. PARSONS. No, sir. I can tell you better how much oil they catch; I do not figure on how much fish they catch. We figure on how many barrels of oil come to market. I can tell you how many barrels of oil are on the market to-day, and how many are held by manufacturers, and how much by dealers.

Senator SEWELL. Can you say whether the fish caught between Sandy Hook and Cape May are used for bait?

Mr. PARSONS. Yes, sir. Our Gloucester people have bought them down at Tiverton and at Block Island. They have gone there and waited a week to get the fish for bait to go on the George's fishing grounds.

Senator SEWELL. Menhaden that have been caught on the New Jersey coast?

Mr. PARSONS. On the New Jersey coast; they have been caught there and brought up that way.

Senator SEWELL. In a condition for bait after being caught in summer on the New Jersey coast?

Mr. PARSONS. If they have not been caught more than twelve hours they would be fit for bait, but if caught twenty-four or forty eight hours they would not be, and they are hardly fit for oil then.

Senator SEWELL. Do the fleet that fish on the Jersey coast and rendezvous north of Long Island take their products north?

Mr. PARSONS. I can not say. The factories located on the Jersey coast would not carry their products north of the Jersey coast to press out oil, but the factories located at Tiverton and those on Long Island would go south for the fish and would bring them to their factories to be pressed.

STATEMENT OF J. S. JOHNSON, OF BALTIMORE, MD.

Mr. JOHNSON. Mr. Chairman, I am engaged partially in the twine-netting business. That is only affected so far as the labor engaged in producing it is supplied by the materials obtained from the menhaden fishery. This bill would bring about the destruction of that great interest, and so affect the labor employed in the production of the material used for the nets. I have no statistics to show how many are employed in it, but 90 per cent. at least of the labor that is employed in the production of these nets and twine is that of women. My experience with them has been that it is the most patient and reliable labor we can get. They are principally girls, some of whom have others dependent on them. I do not know exactly how many are employed. There are probably between 500 and 1,000.

The CHAIRMAN. Seven or eight factories?

Mr. JOHNSON. There are seven or eight factories producing twine in the country. The menhaden fishery does not embrace the whole business of the factories, but it probably amounts to about one-half. The eastern men—the Gloucester and Boston men—probably use more of it than the others do. The labor on the other netting is about 90 per cent. of it women, and women who are dependent on their labor for support, and it is a class of labor that has no trades' unions and go on no strikes. They are reliable, and they are docked for every hour they lose. They work patiently for four to six dollars a week, ten hours a day. They will be affected, of course, if the destruction of this interest is brought about.

Senator DAWES. Can you state how much of the menhaden product in a year is used in the twine-netting business?

Mr. JOHNSON. I should think one-half comes from the menhaden fishery.

Senator DAWES. How much is the aggregate value?

Mr. JOHNSON. I have no means of telling. I have not considered the subject.

STATEMENT OF N. M. JURNEY.

N. M. JURNEY (of North Carolina) appeared.

Senator RANSOM. Mr. Journey is here representing this interest in North Carolina; and we have also Mr. Chadwick here, who is one of the menhaden fishermen himself.

Mr. JURNEY. Perhaps I can give my information better by being asked as to the points you want to inquire about in connection with the various topics involved.

Senator RANSOM. Will you state the value of the menhaden fisheries in Carteret County, N. C., and that vicinity?

Representative SKINNER. There are few menhaden fisheries in North Carolina outside of Carteret County.

Mr. JURNEY. I suppose there are fifty to seventy-five boats employed in the business in Carteret County. Some of these boats are small, but many are quite large.

Senator RANSOM. How many people are engaged in the fishery?

Mr. JURNEY. Over 300.

Senator RANSOM. What is the amount of capital employed?

Mr. JURNEY. I should think at least \$75,000. There are at least 200 families or more who are looking to this industry alone for a livelihood.

The poor people who live along the coast where they do not have very good soil to cultivate look to the water as a means of support, and they have invested everything that they can raise for small boats and seine nets, and they are employed by Mr. Chadwick and Mr. Jones, his partner, and by Dye Brothers, and they catch these fish and sell them, and support their families very well in that way.

Senator RANSOM. Do they make oil and guano there too from the fish?

Mr. JURNEY. Yes, sir; these factories manufacture the menhaden into oil and fish scrap.

Senator RANSOM. There is a great deal of other fishing going on there. That is a great fish country?

Mr. JURNEY. Yes, sir.

Senator RANSOM. In your judgment and the judgment of the people there, has this menhaden fishing interfered at all with the other fishing?

Mr. JURNEY. Not in the least. I have lived there six years myself, and the last four years without interruption, and I have no special interest in this matter. I am a minister of the Methodist Church, but I am very fond of fishing, and I should know if there was any objection to this menhaden fishing from any quarter whatever as a means of breaking up the sportsmen, for I belong to that class myself in a certain way. I built a boat myself for that purpose, and I will warrant that I have caught more fish trolling in North Carolina than any man in the State; and there have been more bluefish and more mackerel running there on the coast when there have been more of the menhaden. I have gone out there at times, and when the menhaden were more plentiful, and caught with a hook and line as high as 388 bluefish, averaging 2 pounds apiece.

Senator RANSOM. In that connection, let me ask Mr. Chadwick one question, because he is engaged in the business.

Mr. Chadwick, you have seen these menhaden caught in the nets. Will you give this committee some idea of the number of eatable fish that are taken up when you catch the menhaden?

Mr. JURNEY. Just let me finish and then let him come in. In all the catch of the menhaden there I do not know that I have ever heard any of the fishermen say that they have caught 40 fish that would be a palatable fish at all to eat.

Senator DAWES. Were the menhaden taken within 3 miles of the shore?

Mr. JURNEY. Oh, yes; within half a mile. It would annihilate the business entirely to prohibit such fishing within 3 miles of the shore. They might as well give up and go home. It means confiscation to all the property and turning loose three hundred people with no employment at all.

Senator SEWELL. Have you any personal knowledge of that fact?

Mr. JURNEY. I have. I know every man personally who is engaged in the fishery there.

Senator SEWELL. You do not find any fish outside the 3-mile limit?

Mr. JURNEY. I have never known a single catch beyond 2 miles of the coast.

Senator SEWELL. You stated to the committee that you caught more bluefish when the menhaden were on the coast than at other times?

Mr. JURNEY. I say that year before last, during the immense run of the menhaden, there were more bluefish and mackerel than at any other times.

Senator SEWELL. Is it not true generally that the bluefish and the mackerel follow the menhaden?

Mr. JURNEY. I do not know that it is.

Senator SEWELL. Do you not know that they subsist on menhaden?

Mr. JURNEY. No, sir; I have no knowledge of it in the world. I have caught bluefish of excessive size, and I know they feed upon small fish. I have never yet found in a bluefish or mackerel any menhaden, and we have never known that any kind of fish feed upon them except the sharks; and there has never been the slightest complaint from any other fishing interest in North Carolina, and we have just as much there of the various kinds as you have anywhere. There has not been the slightest complaint from any enterprise there. Many sportsmen go down there. We have a watering place there, and a hotel that will accommodate a thousand guests, and three or four more that I suppose could take care of three thousand people. Quite a number of people from all the South and North come there. I think it is one of the finest places to troll on all the Atlantic coast, and there has never been the slightest complaint made from any source whatever about the menhaden fishery that ever I have heard; but to the people in that country, and especially the poorer class of people, who are looking to this interest for a livelihood and a support, this measure would be just the confiscation of everything.

Senator SEWELL. Do any northern people go down there to fish?

Mr. JURNEY. It is purely local. Opposite Beaufort and Morehead City we have as many as five whale fisheries, all of them full of men who have bought their guns to shoot bombs, and have lances and all the accoutrements necessary for the capture of whales, and if this bill passes it will destroy all their interest. The bill speaks of the "capture of fish to be manufactured into oil."

Senator RANSOM. Have you not written an article on the menhaden?

Mr. JURNEY. Yes, sir.

Senator RANSOM. If you can get a copy of that article, will you send it to the chairman of the committee?

Mr. JURNEY. If I can get a copy this evening and send it, I will do so.

Senator SEWELL. The bill is amended to allow 9-inch nets to be used.

Senator DAWES. They do not catch whales in nets?

Mr. JURNEY. It applies to any kind of fish caught for oil.

Senator SEWELL. It only prohibits fishing by nets.

Senator DAWES. There is a provision here that you can fish for any fish that will not go through a 9-inch net.

Mr. JURNEY. I did not notice that particularly.

Senator DAWES. That is, you may fish with a net of that size. It does not permit you to fish by other means, does it?

Senator SEWELL. It was never intended to prohibit the catching of large fish by any other means.

Mr. JURNEY. But the expression "or other appliances upon the high seas within 2 miles of the Atlantic coast, or in any arm of the sea, river," etc., I did not understand.

STATEMENT OF REPRESENTATIVE SKINNER.

Representative THOMAS G. SKINNER (of North Carolina) appeared.

Senator RANSOM. Mr. Skinner represents a district in which there is a great deal of fishing. It is the great fishing part of this continent,

if I may say so—the Pamlico and Albemarle Sounds and the eastern part of North Carolina. I would be glad to have Mr. Skinner state whether there is, on the part of other fishermen, the shad fishermen, the rock fishermen, the bluefish fishermen, or the bass fishermen, any opposition whatever to the menhaden industry.

Representative SKINNER. I represent nearly all the water of North Carolina. I think if this bill were put to a vote in my district it would not get a single vote. There is some little objection to purse-net fishing in my State, but none to purse-net fishing for menhaden. The only objection we have to purse-net fishing is to purse net fishing in our inland waters for bass. We think that has a tendency to break up the breed.

I wish to say in connection with what some other gentlemen have submitted, that I have been a fisherman almost from my infancy; my father was a fisherman, and I was almost born on a fishing beach. My people have been always largely engaged in the shad and herring fishery. We catch in our district on the Albemarle Sound larger catches of shad and herring, I believe, than in any other part of North America; and it has always been the custom, at least we have always noticed that it has been the habit, of those fish to go and come. Sometimes for four or five years there will be a very small catch of herring, and then will come a tremendous glut of herring without any possible known cause. I remember in 1855, almost as far back as I can remember, that when there had been no menhaden fishing, when there never had been a menhaden caught in North Carolina, there came an immense glut of menhaden. They came all through our sounds. The other fish left. There was the smallest catch of herring that year and for three or four years afterwards that had ever been in North Carolina, but there was an immense glut of menhaden all through our sounds. They were not caught then, and were not caught for many years afterwards to be used for oil and scrap; but both since and before the menhaden have been caught for scrap they have come and gone, the shad have come and gone, the herring have come and gone, and all sorts of fish. The bluefish more especially have come and gone without any ostensible cause, no cause that we could find out. It certainly has not been affected by the menhaden fishing in our district.

I want to say, too, that I have seen the menhaden fish caught, not to a very great extent, because the part of the district I live in is not engaged in it much, but I have seen drafts of them come, and I never saw at any one time many edible fish caught in a draft of menhaden. I do not believe that they associate together. I do not believe there is any fish on our coast that live upon the menhaden as food. Now and then they may cut them up. I have seen bluefish in a gang of menhaden cutting them up, and you would think they were eating them, but I do not think they eat any of them. I have seen fifty or a hundred people fish with a troll-line, and have seen the fish cut open, but I have never seen a menhaden inside a bluefish. I have seen as many as five thousand large bluefish, weighing from 10 to 28 pounds, caught on our coast, and I have seen them cut up, and when menhaden, were all around them, and I have never seen a single menhaden come out of them. I do not believe they eat menhaden.

I want to say that in another part of my district establishments were put up the year before last and last year, and there is being more capital invested in it now at one point in my district, and fisheries for porpoises have been commenced, and this bill would annihilate that business also.

Senator SEWELL. It has been amended to cover that.

Representative SKINNER. The passage of this bill would throw out of employment many men in my district.

STATEMENT OF W. S. CHADWICK.

W. S. CHADWICK (of North Carolina) appeared.

Senator RANSOM. Mr. Chadwick, how many eatable fish have you seen come up when you have taken large hauls of menhaden?

Mr. CHADWICK. Very few; sometimes none. Sometimes we may get a peck or a half bushel in a haul of three or four hundred thousand. As a rule we never get any amount.

Senator DAWES. What kind of eatable fish?

Mr. CHADWICK. We get a perch sometimes, and what you call weak-fish; we call it trout. Sometimes we get a trout; sometimes we may get a little tailor.

Senator RANSOM. Mr. Chadwick, do you represent those engaged in catching fish for food as well as those who catch menhaden?

Mr. CHADWICK. I do.

Senator RANSOM. You are in both businesses?

Mr. CHADWICK. Yes, sir.

Senator RANSOM. Have you any idea where the menhaden spawn?

Mr. CHADWICK. I have not.

STATEMENTS OF N. B. CHURCH, OF TIVERTON, R. I.

Mr. N. B. CHURCH. Mr. Chairman, I am a practical fisherman. I belong to Rhode Island, and am familiar with all parts of the coast. I am engaged in the menhaden fishery.

Mr. D. T. CHURCH. How is it on the Jersey coast? Do the hook-and-line fishermen come to you?

Mr. N. B. CHURCH. When we are there we always see the boats of the food fishermen. There were alongside of our steamer this fall as many as twenty boats at once. I asked them about this bill, and they said they were all opposed to it.

I have no general statement to make in regard to this fishing. I have engaged in the fishing for twenty-five years from the coast of Maine to the coast of South Carolina, and if there is any question you desire to ask in regard to it I can answer it.

Senator SEWELL. I should like to know what proportion of the fish caught on the New Jersey coast is caught within the 3 mile line.

Mr. N. B. CHURCH. I should say, roughly, ninety-nine one hundredths. Probably it would not be quite as much as that, but nearly.

Senator SEWELL. What proportion of the catch of the whole fleet is on the New Jersey coast now, taking last year?

Mr. N. B. CHURCH. The last year was very unfavorable on the New Jersey coast. The catch was very small. I think on the 1st of August or thereabouts the fish came from the south part of the New Jersey coast and went on to the New York coast. I do not think that during the months of August and September there were 5,000 barrels caught on the coast of New Jersey.

Senator SEWELL. How many steam vessels are engaged in the business?

Mr. N. B. CHURCH. I think seventy or eighty altogether on the coast. I do not know exactly.

Senator SEWELL. What is the tonnage of the vessels?

Mr. N. B. CHURCH. The tonnage I think runs up to the largest steamer, which is 125 tons.

Senator SEWELL. What is the capacity of that vessel in fish?

Mr. N. B. CHURCH. She carries 2,700 barrels of fish.

Senator SEWELL. Is that vessel ever full?

Mr. N. B. CHURCH. I have filled her twice.

Senator SEWELL. In how long?

Mr. N. B. CHURCH. In five hours.

Senator SEWELL. What is the capacity of your net at one time for a haul?

Mr. CHURCH. Two hundred and twenty-five feet in length, and from 80 to 100 feet in depth.

Senator SEWELL. How many fish have you caught at any one time at most?

Mr. N. B. CHURCH. Fifteen hundred barrels.

Senator SEWELL. From your practical knowledge of fishing, does it not destroy the fishing grounds of such fish, for instance, as sheepshead, to have these nets hauled over them?

Mr. N. B. CHURCH. In my experience in twenty-five years' fishing I never caught a dozen sheepshead in my life with a purse net or in any other way. I never caught a striped bass in my life with a purse net.

Senator SEWELL. I did not speak of catching them, but of disturbing their feeding grounds.

Mr. N. B. CHURCH. You ask for my opinion. From my own knowledge I know nothing about it.

Senator SEWELL. You have no knowledge, because you have not fished for them with hook and line, and have not located them in that way?

Mr. N. B. CHURCH. I have not.

The CHAIRMAN. In making a haul for menhaden do you get many other fish?

Mr. N. B. CHURCH. Very few; we do not get enough to eat, as a general run.

The CHAIRMAN. Of all kinds together?

Mr. N. B. CHURCH. All kinds together. When the bluefish strike the coast in the spring of the year we occasionally get some bluefish, but very few, and later in the season we do not catch fish enough to eat, and have to buy our fish for eating in the market.

The CHAIRMAN. If you should see a shoal of mackerel, would you not throw your nets for those?

Mr. N. B. CHURCH. No, sir. We very often see schools of drumfish out at sea, oftener at sea outside the 3 miles than we do of menhaden. We see them of tens of thousands of barrels in schools, but we never think of disturbing them. They are no good to us.

Senator SEWELL. Do they not yield fish oil?

Mr. N. B. CHURCH. We never tried it. I do not think there is any oil in them. There is no market for them whatever. I have caught schools of drum on the coast, but we never supposed they were valuable for food fish. We see them in the summer in quantities along the coast, but not to my personal knowledge. Two captains told me that oyster-men in Prince's Bay offered them \$100 each to set on their oyster beds and catch them, for they said they were destroying the oysters. We saw them on the Jersey coast, tens of thousands in a school.

Senator RANSOM. Of the drums?

Mr. N. B. CHURCH. Yes, sir; the school I caught were not edible fish, because we wanted a mess ourselves, and I picked out a nice looking

fish and cleaned it, but it was not edible ; it was full of worms. I scaled and cut a dozen different fish, but they were full of worms half as large as my small finger.

Mr. D. T. CHURCH. What is the size of the net you use ?

Mr. N. B. CHURCH. We use 2½-inch nets. The 8-inch net you spoke of, of course, would be no barrier whatever to the fish.

Senator DAWES. What kind of fish are caught in nets of that sort ?

Mr. N. B. CHURCH. I think they use as large as that to catch porpoises.

Senator DAWES. Could not anything smaller than that be caught in such nets.

Mr. N. B. CHURCH. No, sir ; fish about that size would go in.

Senator DAWES. How much would such a fish weigh ?

Mr. N. B. CHURCH. From 2 to 5 pounds. There are several gentlemen here who can tell in regard to menhaden being necessary to the presence of bluefish. In 1884, the body of menhaden on the coast was on the coast of Rhode Island, and that was the year the bluefish was so plenty at Fire Island, and about there. The fish were caught in Rhode Island and brought to New York to be rendered. In 1885 the menhaden were eastward of here and the bluefish were off shore.

Senator DAWES. Have you observed in schools of fish moving east and those moving back south, whether there is any great difference in the quantity when they go one way or the other ?

Mr. N. B. CHURCH. Generally the quantity seems the largest when they go south. I suppose that is accounted for because they nearly all start at the same time. In 1884 when they took the southern course the coast was a complete body for 25 miles off shore and in, according to the pilots. We were not out, but when they went out it was one solid body of fish going down the coast, and they were followed by a school of sharks, something that I never saw in my experience in fishing before, and I think there were millions of sharks in a school. I have no doubt that there were a million sharks in one large school that I saw.

Senator DAWES. Following the menhaden ?

Mr. N. B. CHURCH. Following the menhaden.

Senator DAWES. Do you think they live on the menhaden ?

Mr. N. B. CHURCH. I have no doubt about that. We have taken as high as 200 menhaden out of one shark. Those sharks were all the way from 6 to 14 feet long.

Senator DAWES. A million sharks. How many menhaden would they take ?

Mr. N. B. CHURCH. That I do not know. Professor Baird can tell. We took as high as 200 whole fish out of one shark.

Senator STANFORD. How long will it take a shark to digest a fish like that ?

Mr. N. B. CHURCH. I do not know. They are just as whole when we cut the shark open as when caught. Probably they are not a great while digesting.

The bill practically does away with fishing for another reason, which not many have stated. Take the fish that are off shore. Generally when they school off shore, which they do occasionally, they are driven there by sharks and driven up into very compact bodies, and the minute you inclose them in a net every shark goes for them and would tear the net all to pieces, and it would be impossible to save any fish.

Senator DAWES. So that off-shore fishing with nets for menhaden is not practicable then ?

Mr. N. B. CHURCH. Not at all.

The CHAIRMAN. You speak of an immense body of menhaden going south, 25 miles in width. How long was that?

Mr. N. B. CHURCH. The first day we saw the fish they were at Coney Island, and the fishermen along the Jersey shore as far down as Squan said they were there, so that probably they were 25 or 30 miles long.

The CHAIRMAN. Then it was a large field of 25 miles square?

Mr. N. B. CHURCH. Yes, sir; that was the notice from the pilots. They said the fish were off shore. We did not see them. If we had had the facilities for catching them at that time, it was impossible to take them.

Senator DAWES. In all your fishing for menhaden what proportion of your catch has been outside of the 3-mile line on the Jersey coast? Of what you have done on the Jersey coast how much has been outside?

Mr. N. B. CHURCH. I think, I said about 1 per cent. Out of 100 99 per cent. were caught within that line, mostly within half a mile of the shore. I have fished a great deal on the Jersey shore, and I have been always very particular about the fishermen who entered the protests. When they came alongside I gave them *carte blanche* to get their fish, measure their own fish; take them, and pay me what they were worth. I asked them always to come and get what bait they wanted at any time, if they would not interfere with my business.

Senator DAWES. If they were left to themselves to do just as they pleased in what way would they interfere with your fishing?

Mr. N. B. CHURCH. They would take my time. If I had to measure the fish out and give them to them it would occupy my time.

Senator DAWES. They do not interfere with the catching of them?

Mr. N. B. CHURCH. Not at all.

Senator DAWES. Is there any complaint that you interfere with them?

Mr. N. B. CHURCH. They say not. I never have found a single instance in all my discussion with the fishermen on the Jersey coast where one of them made a statement but what he was directly opposed to any legislation in regard to menhaden.

Senator SEWELL. Where have you seen anybody on the Jersey coast?

Mr. N. B. CHURCH. All the way from Sandy Hook to Cape May. Most of the fishing on the Jersey coast is between Squan and the Highlands.

Senator SEWELL. Do you go ashore or do they come out to you?

Mr. N. B. CHURCH. They come out to us. I never go ashore. We meet a great many of them right off Long Branch.

Senator SEWELL. There are petitions to this committee from all along there, signed by three or four thousand persons.

Mr. N. B. CHURCH. I do not doubt it, but that is the answer they always give me. I have met hundreds of them in my experience in fishing, I do not know but thousands; and they all tell me they have no objection to our fishing.

STATEMENT OF EDWARD WILCOX, OF PROVIDENCE, R. I.

Mr. WILCOX. I am here to answer any questions that Senator Sewell has to ask in regard to this matter. I have fished on a steamer for twenty years or more, but I have fished more particularly on the Jersey coast for the last eight years.

Senator SEWELL. Have the menhaden increased or decreased during that period?

Mr. WILCOX. I do not see any appreciable difference either way.

Senator SEWELL. What time do you commence fishing?

Mr. WILCOX. Usually from the 1st to the 15th of May.

Senator SEWELL. Where do you strike the menhaden first?

Mr. WILCOX. One or two years I have caught them, say, half way from Sandy Hook to Fire Island. We usually catch the menhaden at the east end of Long Island in the spring of the year. We get them there before we do on the coast of New Jersey.

Senator SEWELL. How near the coast do you catch them?

Mr. WILCOX. Within half a mile, especially in the spring. In the spring they will not show in deep water at all.

Senator SEWELL. Do you fish near the inlets?

Mr. WILCOX. The inlets from the coast?

Senator SEWELL. From the ocean?

Mr. WILCOX. No, sir; not very near. We fish there, of course, when we do not in other places, but there is such a tide there that it capsizes our seine sometimes.

Senator SEWELL. Where is your depot to which you take the fish?

Mr. WILCOX. Barren Island.

Senator SEWELL. If you fish on the Jersey coast for menhaden, say at Seabright, when you pull up you take them to Barren Island?

Mr. WILCOX. Yes, sir.

Senator SEWELL. How long does it take to make that trip?

Mr. WILSON. About an hour and forty minutes to run over from Seabright or Highlands or along there. From the Iron Pier it takes me an hour and forty minutes to run to Barren Island.

Senator SEWELL. Do you know anything about the habits of the bluefish and sheepshead?

Mr. WILCOX. I presume I know just as much as any other person does. I have made it my study to try to learn the habits of the menhaden, and to understand where they spawn, and everything of that kind. In fact, Professor Baird several years ago furnished us with blanks, and thermometers to take the temperature of the water, the kinds of fish seen, and the quantity taken, the direction of the wind, etc., and any matter relating thereto, and I kept that for two years. I made my observations of the temperature of the water three times a day, and I did not know any more about them at the end of two years than I did before I commenced. Of course I have my surmises the same as any one else.

Senator SEWELL. You do not believe that any practical knowledge has been obtained of the menhaden?

Mr. WILCOX. Not at all; no practical knowledge.

Senator SEWELL. As to where they spawn?

Mr. WILCOX. As to where they spawn, I think it is in a great measure as Professor Baird testified before the Halifax commission. The bluefish disappear; where they go he says he does not know. They may go to the Mauritius or to the Canary Islands; he does not have any idea where they go. These fish come on the coast in the spring. In my observation I have had a very good chance to learn. One year they seem to come in on the Long Island shore from directly off shore, and they will be coming from a southeast course, when they will strike the shore, and it is natural for them to follow that shore in the spring. That we know, because I have fixed on them off Rockaway Beach to day, and to-morrow they would be at Fire Island, a distance of 40 miles; perhaps they would go between sunset at night and daylight the next morning, and they would continue to go along, following that

shore on, and when they get to the east end of Long Island we do not know where they go. Sometimes I think they go off shore, but sometimes I think they go into Long Island Sound.

Senator DAWES. In your fishing experience off the Jersey coast what portion of the menhaden that you have taken has been within and what portion without the 3-mile line?

Mr. WILCOX. I have fished there eight years, and I do not remember but twice in the eight years of setting my seine 2 miles from the shore. I do not think in the whole eight years there were more than two instances of setting the nets outside of 2 miles. Of all the fish certainly ninety-nine hundredths are caught within a mile of the shore.

Much has been said of the effect on food fish. I have a little model here of a purse net as we use it. The tendency, in my opinion, of food fish, when disturbed, is to go to the bottom, and not to strike off in a horizontal direction as the menhaden do. If we go around a school of fish that have food fish under them, this is the style of a net we have [exhibiting]. This is about the sized net we use; this is $2\frac{5}{8}$ inches. but we use a $2\frac{1}{2}$ net generally. We have half of this in what we call a working purse. We see a school of fish and surround it, but when we come together we have this arrangement [exhibiting]. This purse-net takes its name from the old-fashioned purse.

If you had an old-fashioned string purse you would see the principle exactly. You put in your thumb and finger to haul it up. Of course we can not have a man to go down in the water and hold it down, and we have a lead that will weigh about 180 pounds, and after we set the seine and draw these lines together [illustrating] with these other lines on the water we hook the blocks on in that manner [indicating], and this weight goes down and leaves all that up there. That is a purse-net. When dropped for food fish they will find that opening [indicating] ninety-nine times in one hundred; they will almost always find that opening and go through that. Menhaden will strike against the seine in this manner [indicating]. The sharks destroy the nets and cut the fish right through the twine. The shark will come along and take the twine, fish and all in his mouth. I have taken twenty-four menhaden out of one shark. The lead does not go on the bottom; sometimes we just let it go down two or three fathoms or one fathom, but it does not make any difference if that does go on to the bottom; just as soon as the menhaden strike the seine they will raise the whole thing, lead and all. I have seen the lead come into the boat—come in oftener than anything else—come clear up to the top of the water.

Senator STANFORD. What is the depth of the net?

Mr. WILCOX. On the Jersey coast, in that shoal water, we usually rate it about 90 feet. This is the size of net we use.

Senator STANFORD. The lower part of the net is never down below 100 feet?

Mr. WILCOX. Very seldom, though we can fish in shoal water with them just as well occasionally. We will set the nets on rocks where there is a large school of fish. We will run the risk of getting the nets torn. We send a small boat to hold this up until we surround them, for when the fish strike it they will raise this [indicating] right up. In my experience of taking menhaden it is very rarely we get any food-fish. We do occasionally get a bluefish or something of that kind; but as a general thing the sand-bottom food fish does not inhabit the sand bottoms. Menhaden we get on sand bottoms.

Mr. D. T. CHURCH. I should like to have the net spread out once more to give an idea. That seine is 1,800 feet long in the water and 100

feet deep. There are, say, 300,000 fish in the water. When they start they start horizontally. Every fish starts horizontally to escape. When they strike they strike their noses in one of the meshes, and they are caught by the thousands. This acts with the power of a steam engine almost. The menhaden run horizontally and strike the mesh. All the edible fish, such as the weakfish and others, naturally go to the bottom for protection, and as they run down we haul the seine right over them. That is the actual fact, and that is the reason we do not catch any more edible fish.

Mr. WILCOX. I have seen the time when schools of fish would strike the seine, that we had to make this purse-twine fast.

Representative SKINNER. Did you ever in all your life see a sheeps-head caught in one of them?

Mr. WILCOX. I caught one once. That is all I ever caught. I have forgotten where it was, but I remember taking it. I am very curious to ask questions at times, and last fall I was off Seabright and one day the hook and line fishermen wanted bait. "Well," said I, "I understand that you are trying to get your Senators from this State to have a bill passed shoving us off and stopping our fishing altogether. I would not think you would come to us for bait in that case." They said to me, "Why, nothing of the kind. We have never signed for any such bill, and we do not want any such bill. We want you to come here to fish so as to catch bait for us." That was their statement. I do not know how many I asked, but I have talked with a great many of them down there in regard to that, and their statements to me were always—whether it has been through policy, thinking I would favor them in that way or not, I do not know—"We want you here so as to catch bait for us."

Senator DAWES. Do you think they come in in greater quantity for bait—that they gather the fish in there by your processes?

Mr. WILCOX. Do you mean whether the menhaden bring food fish in there any more?

Senator DAWES. Yes.

Mr. WILCOX. My experience has been that where bluefish are you will not find menhaden. The menhaden are to them the same as sheep would be to dogs. Wherever bluefish are you will not find menhaden if they can get away. The bluefish drive them right ashore.

Senator DAWES. Do the hook-and-line fishermen keep away from you?

Mr. WILCOX. Oh, we do not interfere at all; we do not clash.

Senator DAWES. They come around you?

Mr. WILCOX. Yes, sir; just as agreeable as can be.

Senator DAWES. What is the class of fishermen who are in favor of this bill?

Mr. WILCOX. I do not know who they are; that is something I do not know anything about. I have only talked with those whom I saw coming off there in boats. I had heard rumors that there was a feeling for such a bill among the fishermen. Those I talked with on the Jersey coast said what I have stated. If they saw us anywhere near in good weather they would come alongside.

Senator DAWES. So far as you know is it those who fish on dry land who are in favor of this bill?

Mr. WILCOX. That is my opinion. I honestly believe that to be the fact. I believe that the parties who complain are those who do not have any real interest in fishing.

Senator DAWES. You have observed the schools of menhaden that go north and the schools that go back south ?

Mr. WILCOX. Yes, sir.

Senator DAWES. Is there any appreciable difference ?

Mr. WILCOX. No ; but, if anything, the schools are larger, more compact, I think, when they go south in the fall than they are when they move north. I should like to say a word in regard to that. Sometimes we will take fish at Sandy Hook in the fall of the year, and will follow them down to the Capes of the Delaware, and they disappear ; that is the last we see of them ; we can not find traces of them below that. More especially, if they are heavy with spawn, they seem to disappear and go to sea.

Senator RANSOM. May I interrupt you ? Mr. Journey tells me that the menhaden go up the coast in the spring, swimming up by North Carolina in March and April very thin and very poor, and in September and October they return, as you say, heavy with spawn and very fat indeed.

Mr. WILCOX. Yes, sir.

Senator RANSOM. His impression was that they went on down the coast towards the Gulf, but your idea is that they go to sea.

Mr. WILCOX. For this reason, that very often we have followed these fish along to the Capes of the Delaware one night, and to-morrow we would expect they would be going southward, and we would expect to find them further southward 40 or 50 miles, but when we came to look for them, we could not find them or catch any trace of them.

Senator RANSOM. But Mr. Journey says they find them still in large quantities at Hatteras.

Mr. JURNEY. I have studied the matter a good deal, and when they first appear they appear to be coming up the coast from the south, of course ; they are the shad species, and look very much like shad, and live by suction, as the shad does, and they look just like a shad does after it has spawned—very thin and very poor. When caught then perhaps they will not yield more than half a gallon to a thousand. In the fall, when our people fish for them, in September and October, and later on about the first of November, they are exceedingly fat, and yield all the way from six to eight gallons of oil per thousand. It seems as if they were almost in a condition to spawn. Then the course of the menhaden is southward. My supposition is that they spawn somewhere off the Gulf of Mexico.

Mr. WILCOX. I have thought that these fish in the spring of the year did come from the south, but if they come from that way it is a very singular thing always in the spring of the year fishermen take them at Montauk (that is 110 miles east of Sandy Hook) before we get them at Sandy Hook.

Mr. JURNEY. They may follow the Gulf Stream.

Mr. WILCOX. Perhaps ; we do not know anything about them.

STATEMENT OF D. F. OVERTON, OF FAIRPORT, VA.

Mr. OVERTON. Mr. Chairman, I have been asked to appear here. I have no statement to make. I am willing to answer any questions that may be put to me. I am entirely unprepared to make any statement. I did not even know I was coming over until last night.

Senator RANSOM. Have you heard the statements made by these gentlemen in reference to the menhaden fishery, and are you acquainted with it, and would your general statement agree with theirs ?

Mr. OVERTON. Yes, sir ; their experience is mine.

The CHAIRMAN. How many people are interested in your vicinity in the menhaden business?

Mr. OVERTON. I can not answer that without some thought. I can say that there are about 25 nets; about 250 to 300 fishermen.

The CHAIRMAN. On a coast line how long?

Mr. OVERTON. That is in Virginia, south of the Potomac, 75 miles from the capes of Virginia. I am speaking of the Chesapeake Bay exclusively.

The CHAIRMAN. Within how many miles of coast line?

Mr. OVERTON. It is not on the coast line. On the bay we fish 30 miles either way, and in some instances we even go as far as the capes.

The CHAIRMAN. What would be the effect of this bill on that community?

Mr. OVERTON. It would be ruin entirely for me and a great many others situated as I am. Every dollar I have in the world is in the fish business. I am engaged in the food fishery and also in the menhaden fishery.

ADDITIONAL STATEMENT OF D. T. CHURCH.

Mr. D. T. CHURCH. In relation to the spawning, we can give our view of it. It was the generally received opinion in relation to the spawning of menhaden up to within four or five years ago, that they came full of spawn in the spring the same as other fish, but by investigating and taking evidence, by going and examining the fish for a number of years, we learn that the spawn in the menhaden are not found ripe until somewhere in October, November, or December, and when they disappear they disappear full of spawn and go into the open ocean, and that is the last seen of them in that condition. When they come back they are always empty of spawn, about the middle of next summer, in May or June. You will see in the open sea any amount of little menhaden. The evidence goes to show that the menhaden spawn in the open sea in the winter time.

Then there was another point you asked me that I did not quite apprehend in relation to the jurisdiction of the States in regard to this fishery. I will call your attention to the fact that in the treaty with Great Britain made in 1871 we gave to British subjects the right to come into any river, bay, or inlet of the United States. Now, if the United States had that right in relation to a subject of Great Britain, of course we have it.

Senator SEWELL. We gave them the same rights we gave our own citizens.

51ST CONGRESS, }
2d Session. }

SENATE.

{ MIS. DOC.
{ No. 47.

REPORT

OF THE

NATIONAL ACADEMY OF SCIENCES

FOR

THE YEAR 1889.



WASHINGTON:
GOVERNMENT PRINTING OFFICE.

1891.

LETTER OF TRANSMITTAL.

NATIONAL ACADEMY OF SCIENCES,
Washington, D. C., February 25, 1890.

SIR: In conformity with the requirements of the act of incorporation approved March 3, 1863, I have the honor to submit herewith a report of the operations of the National Academy of Sciences during the past year.

Very respectfully,

O. C. MARSH,

President of the National Academy of Sciences.

The PRESIDENT OF THE SENATE.

REPORT OF THE NATIONAL ACADEMY OF SCIENCES.

The National Academy of Sciences was established by act of Congress in March, 1863, with power to frame its own constitution, select its own members, and provide in other respects for its continuance and successful operation.

The object of the Academy is to advance science, and especially to investigate, examine, experiment, and report on any subject of science or art whenever called upon by any department of the Government.

The Academy contains at present about 100 members, and these have all been selected for their original researches in science. They represent within their ranks nearly every department of knowledge, and their services, in accordance with the charter of the Academy, are always at the disposal of the Government, without compensation.

SESSIONS OF THE NATIONAL ACADEMY.

During the past year, the Academy has held three sessions. The first was the regular annual meeting held in Washington, D. C., April 16 to 19, 1889; the second was a scientific session, in Philadelphia, November 12 to 14, 1889, and the third was a special session in Philadelphia, November 13, 1889.

STATED SESSION.

HELD IN WASHINGTON CITY, APRIL 16 TO 19, 1889.

The Washington session was held in the National Museum, the president, Prof. O. C. Marsh, presiding.

The following members were present during the session:

Abbe.	Cook, G. H.	Hilgard.	Newcomb.
Abbot.	Cope.	Hill, G. W.	Peirce.
Allen.	Dutton.	Hyatt.	Peters.
Barker.	Ferrel.	Langley.	Powell.
Bell.	Gibbs, W.	Marsh.	Pumpelly.
Billings.	Gilbert.	Mayer.	Putnam.
Brewer.	Gill.	Meigs.	Remsen.
Brooks.	Goode.	Mendenhall.	Rowland.
Brush.	Gould.	Michelson.	Schott.
Chandler, S. C.	Hague.	Mitchell, S. W.	Walker.
Coffin.	Hall, A.	Morton.	Wood.
Comstock.	Hall, J.	Newberry.	Wright.

At this session the following papers were read and discussed:

1. PEIRCE, C. S.: On Sensations of Color.
2. GIBBS, W., and HARE, H. H.: Notice on the Method and Results of a Systematic Study of the Action of Definitely Related Chemical Compounds upon Animals. (Read by Dr. Hare.)
3. COPE, E. D.: On the Pliocene Vertebrate Fauna of Western North America. Discussed by Messrs. Gilbert and Cope.
4. TODD, D. P.; presented by S. Newcomb: On Composite Coronagraphy. Discussed by Messrs. Langley and Peters.
5. PEIRCE, C. S.: On Determinations of Gravity.
6. COPE, E. D.: On the North American Proboscidea.
7. HALL, A., Jr.; presented by G. J. Brush: On the Mass of Saturn. Discussed by Messrs. A. Hall, G. W. Hill, Peters, and Newcomb.
8. REMSEN, IRA: On the Rate of Reduction of Nitro-compounds.
9. REMSEN, IRA: On Some Connection between Taste and Chemical Composition.
10. MENDENHALL, T. C.: Recent Researches in Atmospheric Electricity. Discussed by General Greely.
11. MICHELSON, A. A.: Measurement by Light Waves. Discussed by Mr. Rowland.
12. ROGERS, W. A.: Additional Experimental Proof that the Relative Coefficient of Expansion between Baily's Metal and Steel is Constant between the Limits Zero and Ninety-five Degrees Fahr. (Read by title.)
13. MICHELSON, A. A., and MORLEY, E. W.: On the Feasibility of the Establishment of a Light-wave as the Ultimate Standard of Length. Discussed by Messrs. Peirce, Rowland, and Michelson.
14. CHANDLER, S. C.: On the General Laws pertaining to Stellar Variations. Discussed by Messrs. Gould, G. W. Hill, Newcomb, Chandler, and Peters.
15. PETERS, C. H. F.: Review of the Trivial Names in Piazzzi's Star Catalogue.
16. NEWBERRY, J. S.: On Cretaceous Flora of North America. Discussed by Messrs. Cope and Newberry.
17. HITCHCOCK, ROMYN; presented by A. Hall: Spectrum Photography in the Ultra-Violet. (Read by title.)
18. WALCOTT, C. D.; presented by R. Pumpelly: The Plane of Demarcation between the Cambrian and Pre-Cambrian Rocks. Discussed by Mr. Newberry.
19. TODD, D. P.; presented by S. Newcomb: Report of the American Eclipse Expedition to Japan, 1887.
20. REMSEN, IRA: On the Nature and Composition of Double Halides. (Read by title.)
21. ABBE, CLEVELAND: Terrestrial Magnetism. (Read by title.)
22. BROOKS, W. K.: North American Pelagidæ. (Read by title.)
23. BROOKS, W. K.: Development of Crustacea. (Read by title.)

ELECTIONS.

The election of officers, for a term of 6 years, took place on Wednesday, April 17, 1889, and resulted as follows:

President, Prof. O. C. MARSH.

Vice-President, Prof. S. P. LANGLEY.

Home Secretary, Prof. ASAPH HALL.

The following members were selected for the council for the ensuing year: Messrs. G. J. Brush, B. A. Gould, M. C. Meigs, S. Newcomb, Ira Remsen, and F. A. Walker.

RECOMMENDATIONS FROM THE COUNCIL.

The following recommendations from the council were adopted by the Academy:

1. That the assessment for the ensuing year be \$5.
2. That the proposed changes in the deeds of trust of the Draper and Smith funds, authorized by the resolution adopted last year, be indefinitely postponed.

HOME SECRETARY'S REPORT.

The home secretary submitted the following report for the past year:

April 16, 1889.

The current business of the Academy has been carried on as in former years.

The printing of the memoirs has made some progress. Part I of Vol. IV has been printed, but owing to delay in getting the plates only one hundred and seventy-seven copies were delivered to the Academy. These have been nearly all distributed to members and foreign associates. The printing of Part II of Vol. IV has not been begun on account of delay with the drawings. The drawings are now completed, and the printing of Part II will begin soon.

In accordance with the direction of the council, the printing of the third volume of biographical memoirs was begun a year ago, and the memoirs of William B. Rogers, Edward Tuckerman, Edward B. Hunt, James C. Watson, and James B. Eads, have been printed. These memoirs make seventy-nine pages of print. Five hundred copies have been struck off, and are held by the printers, Judd & Detweiler, until the volume is completed.

The annual of the Academy referred to in Rule XII has been understood to mean the constitution, rules, and list of members, and has been issued each year. The cost of printing and distributing this annual is about \$40 a year. The publication of this matter again in the annual report of the president has been thought by some of the members to render the annual unnecessary, but the secretary has not thought himself at liberty to discontinue it.

REPORTS OF COMMITTEES.

Mr. Gibbs, for the committee on the election of foreign associates, submitted a report recommending the election of Lieut. Gen. Don Carlos Ibañez, director of the Geodetic Survey and the Census of Spain, and president of the international committee of weights and measures. The foreign secretary was authorized to cast the vote of the Academy for that gentleman, who was declared elected.

At Mr. Langley's request, the committee on reserving public lands on and near Mount Whitney, California, for scientific purposes, was continued.

The home secretary, for the committee on publication, made a statement concerning the printing of the memoirs, and expressed the hope that the style of printing might be improved in the future.

Mr. Gill, representing the committee on publications of the Academy, reported progress.

The president and Mr. Coffin made statements concerning the action of the committee on the relation of the Academy to the Government.

The board of direction of the Bache fund presented a report, which was read by Mr. Gibbs and accepted. (See Appendix D, p. 37.)

Mr. Newcomb submitted the report of the board of trustees of the Watson fund. This report was accepted. (See Appendix D, p. 48.)

THE JAMES WATSON MEDAL.

At a public session of the Academy, held on the evening of April 17, 1889, the second James Watson gold medal and the sum of \$100 in gold were presented to Prof. Edward Schönfeld, director of the Bonn Observatory, Germany.

At the same session, a biographical memoir of the late Prof. Spencer F. Baird was read by Dr. Billings.

NEW MEMBERS.

At this meeting, the following new members were elected: Prof. Lewis Boss, Prof. Charles S. Hastings, Prof. Arthur Michael, Prof. Sereno Watson, and Prof. Charles A. White.

NEW FOREIGN ASSOCIATE.

Lieut. Gen. Don Carlos Ibañez, of Madrid, Spain, was elected foreign associate of the Academy.

TREASURER'S REPORT.

WASHINGTON, D. C., *April 16, 1889.*

SIR: The committee appointed to audit the treasurer's accounts and to compare them with the report made by the committee upon the securities held by the Academy respectfully report that they have examined the books and the accounts of the treasurer, and that they have compared the vouchers with the disbursements reported, and have compared the receipts with the record of dues received from members and with the record of interest received from invested funds of the Academy, and find the same to be correct.

IRA REMSEN.
S. C. CHANDLER.
G. W. HILL.
Committee.

To the PRESIDENT OF THE NATIONAL ACADEMY OF SCIENCES.

REPORT.

SIR: I have the honor to transmit herewith my financial report as treasurer of the National Academy of Sciences.

1. *General fund.*

Balance brought forward from April 17, 1888	\$213. 56
Received during year	503. 26
Total to be accounted for	\$716. 82
Disbursements during year	306. 05
Balance cash on hand	410. 77
Available balances = *\$377.77 + \$500 in 3.65 bonds.	

2. *Bache fund.*

Balance brought forward from April 17, 1888	\$1, 648. 82
Received during year	†3, 985. 73
Total to be accounted for	\$5, 634. 55
Disbursements during year	2, 133. 60
Balance cash on hand	3, 500. 95
Available balance = ‡ \$11.05.	

3. *Watson fund.*

Balance brought forward from April 17, 1888	\$2, 197. 05
Received during year	836. 74
Total to be accounted for	\$3, 033. 79.
Disbursements during year	†2, 735. 40
Balance cash on hand	298. 39
Available balances = § \$198.39 + \$1,500 in 3.65 bonds.	

4. *Draper fund.*

Balance brought forward from April 17, 1888	\$565. 64
Received during the year	200. 00
Total to be accounted for	765. 64
Disbursements during the year	35. 33
Balance cash on hand	740. 31
Available balances = \$480.31 + \$260 reserve.	

* \$33 due secretary from general fund.

† Includes transfer of \$1,500 District of Columbia 3.65 bonds to Watson fund.

‡ \$36 due Bache fund from Philadelphia City bond.

§ 100 due to accompany Watson medal.

10 REPORT OF THE NATIONAL ACADEMY OF SCIENCES, 1889.

5. *Smith fund.*

Balance brought forward from April 17, 1888	\$939. 10
Received during year	324. 00
Total to be accounted for.....	\$1, 263. 10
Disbursements during year	25. 32

Balance cash on hand 1, 237. 78

Available balances = \$705.78 + \$532 reserve.

A detailed account current, with vouchers, is herewith submitted.

Very respectfully,

J. W. BILLINGS,

Treasurer, National Academy of Sciences.

To the PRESIDENT OF THE NATIONAL ACADEMY OF SCIENCES.

REPORT ON SECURITIES.

The following report of the committee to examine securities held by the Academy was read and approved:

WASHINGTON, D. C., *April 16, 1889.*

SIR: The committee appointed to inspect and verify the bonds and securities and other property of the National Academy begs leave to report that it has performed that duty on April 11, 1889.

The bonds and securities of the Academy at present deposited by its treasurer at the Washington Safe Deposit Company's office, 916 Pennsylvania avenue, were inspected and verified individually, and were found to correspond to the list in the treasurer's book.

1. *Bache trust fund.*

United States 4½ per cent. registered bonds	\$42, 100
United States 4 per cent. registered bonds	3, 850
City of Davenport 6 per cent. loan	1, 000
City of Philadelphia 6 per cent. loan	600
Total Bache fund	\$47, 550

Also, land warrant No. 62740 for 160 acres of land in Missouri.

2. *Joseph Henry fund.*

An agreement with the Pennsylvania company for insurance on lives and granting annuities as to the final disposition of the Joseph Henry fund of \$40,000.

3. *Watson trust fund.*

United States 4½ per cent. registered bonds	\$6, 200
United States 4 per cent. registered bonds	850
Certificates of stock of Michigan Mutual Life Insurance Company...	6, 700
Total Watson fund	13, 750

4. *Henry Draper medal fund.*

United States 4 per cent registered bonds	5, 000
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Also, a deed of trust of Mary Anna Palmer Draper, giving \$6,000 to the Academy.

5. *J. Lawrence Smith medal fund.*

United States 4½ per cent. registered bonds \$7,200
 Also a deed of trust of Sarah Julia Smith, giving \$8,000 to the Academy.

6. *Income of the Bache and general fund.*

District of Columbia 3.65 bonds 2,000
 Of this, \$1,500 belongs to the income of the Watson fund, and \$500 to the income of the general fund.

Total of securities held by the Academy 75,500

For the convenience of the auditing committee, a detailed statement of every bond and security, as found by your committee, is herewith inclosed.

Respectfully submitted by,

CHARLES A. SCHOTT.

THEODORE N. GILL.

Committee.

To the PRESIDENT OF THE NATIONAL ACADEMY OF SCIENCES.

ADDRESS BY THE PRESIDENT.

The president made a short address, in which he spoke of the policy of the Academy, its relations to the Government in the past, and the proper action for the future.

DEATH OF MEMBERS.

The president announced the death of Dr. J. C. Dalton, who died February 2, 1889.

Dr. S. Weir Mitchell was appointed to prepare a biographical notice.

The president also announced the death of two foreign associates, Dr. R. Clausius, of Bonn, and Professor Chevreul, of Paris.

INVITATIONS.

The members of the Academy were invited to attend the meeting of the Anthropological Society, Tuesday evening, April 16.

The President of the United States received the members of the Academy, Wednesday, April 17, at 12 o'clock.

The Secretary of the Smithsonian Institution extended an invitation to each member of the Academy and family to attend a reception at the Institution on Thursday evening, April 18, at half past 8 o'clock.

The hospitalities of the Cosmos Club were extended to the members of the Academy during their stay in Washington.

The Academy adjourned April 19, to meet in Philadelphia, November 12, 1889.

SCIENTIFIC SESSION.

HELD IN PHILADELPHIA, NOVEMBER 12 TO 14, 1889.

A scientific session, for the reading of papers only, having been called by the council, as announced at the April meeting, the Academy met at the University of Pennsylvania, Philadelphia, on November 12, 1889.

The president, Prof. O. C. Marsh, presided at this meeting.

The following members were present during the session :

Barker.	Gill.	Mendenhall.	Rood.
Billings.	Gould.	Michael.	Rowland.
Brewer.	Hall, A.	Michelson.	Sellers.
Brooks.	Hall, J.	Mitchell, S. W.	Wood.
Chandler, C. F.	Langley.	Newberry.	Wright.
Cope.	Leidy.	Newcomb.	Young.
Gibbs, W.	Lesley.	Powell.	
Gilbert.	Marsh.	Pumpelly.	

The following papers were read and discussed :

1. LANGLEY, S. P. : On the Economy of Energy in the Glow-worm. Discussed by Messrs. W. Gibbs, Langley, Barker, C. F. Chandler, and Rood.
2. ROOD, O. N. : On Photometry of Colored Light. Discussed by Messrs. Langley, Young, and Rood.
3. GIBBS, W. : On certain Pyrophosphates. Discussed by Mr. Barker.
4. COPE, E. D. : On the Vertebrata of the Miocene of the Cypress Hills of Canada.
5. HALL, A. : On Saturn and its Rings. Discussed by Messrs. Rood, Gibbs, Young, Langley, and Hall.
6. GIBBS, W., and HARE, H. H. : On the Results of the Systematic Study of the Action of Definitely related Chemical Compounds upon Animals. (Read by Dr. Hare.) Discussed by Mr. Gibbs.
7. BARKER, G. F. : On Zinc Storage Batteries. Discussed by Mr. C. F. Chandler.
8. MICHELSON, A. A. : On Relative Wave-lengths. Discussed by Messrs. Rowland, Gould, and Michelson.
9. PICKERING, E. C. : On the Spectrum of Zeta Ursæ Majoris. (Read by Mr. G. F. Barker.)
10. RYDER, J. A. ; presented by T. Gill : On the Persistence and Meaning of the Bi-concave centrum of the Vertebrae of Vertebrates. Discussed by Messrs. Gill and Ryder and the President.
11. BROOKS, W. K. : On the Early Stages of Echinoderms. Discussed by Messrs. Gill and Brooks.
12. GILL, T. : On a Peculiar Ordinal Modification as Exemplified by Fishes of the Family Halisauridæ.
13. GOULD, B. A. : On the New Prototypes of the Kilogramme and the Metre. Discussed by Messrs. Newcomb, Rowland, and Gould.
14. HALL, J. : Remarks upon the Present State of our Knowledge in Reference to a Revision of the Genera of Brachiopoda for the Palæontology of New York, Vol. VIII.
15. BREWER, W. H. : On the Heredity of Acquired Characters. Discussed by Messrs. Wood, Brooks, Powell, Brewer, Gill, and Ryder.
16. MICHAEL, A. : On the "Positive-negative" Hypothesis in its Application to Organic Chemistry.
17. NEWCOMB, S. : On the Results of the Transits of Venus observed in 1761 and 1769.
18. NEWCOMB, S. : On the Theory of Cosmical Temperature. Discussed by Mr. W. Gibbs.

19. POWELL, J. W.: On the Desert Ranges.
20. WOOD, H. C.: On Hypnotic Cases without Suggestion. Discussed by Messrs. Newcomb and Wood.
21. NEWBERRY, J. S.: On the Laramie Group. Discussed by Messrs. Powell and Newberry.
22. MARSH, O. C.: On the Skull of the Gigantic *Ceratopsidæ*. Discussed by Mr. Newberry.
23. MARSH, O. C.: On American Mesozoic Mammals. Discussed by Messrs. Gill and Marsh.

DEATH OF MEMBERS.

The president announced the deaths of Prof. F. A. P. Barnard, Prof. George H. Cook, Prof. Elias Loomis, and Prof. Leo Lesquereux, and appointed Prof. O. N. Rood, Prof. J. S. Newberry, Prof. H. A. Newton, and Prof. J. Peter Lesley, respectively, to prepare the biographical notices.

The president also announced the death of Mr. James P. Joule, of England, a foreign associate of the Academy.

Notice was given by the president that memoirs for the next volume, ready for publication must be sent in by December 1, 1889.

The scientific session then adjourned to meet in Washington on the third Tuesday in April, 1890.

SPECIAL SESSION.

HELD IN PHILADELPHIA, NOVEMBER 13, 1889.

A special session of the Academy having been called by the council, in accordance with Article III, section 1, of the constitution, the Academy met at the University of Pennsylvania, Philadelphia, November 13, 1889, the president, Prof. O. C. Marsh, presiding.

The president laid before the Academy the purpose of the present business session, which was the consideration of his annual report to Congress. He said that this report would contain both the deeds of gift and an account of the grants made from the trust funds of the Academy since these funds were received.

RECOMMENDATIONS.

The home secretary read the recommendation of the council that the president's annual report be approved by the Academy, and that the president be authorized to include in this report the proceedings of the present meeting, as well as those of the last April session.

This recommendation was adopted by the Academy.

Mr. George F. Barker presented the following recommendation of the committee on the Henry Draper medal:

The committee on the Henry Draper medal recommend to the National Academy of Sciences the award of the Henry Draper medal to Prof. Henry A. Rowland, of Baltimore, for his researches on the solar spectrum.

This recommendation was adopted by the Academy.

NOMINATIONS.

Five nominations for membership in the Academy were read by the home secretary. These will be acted on at the April meeting, 1890.

RESOLUTIONS.

Mr. W. Gibbs presented the following resolutions, which were adopted by the Academy:

Resolved, That the Academy tender to the provost, trustees, and faculty of the University of Pennsylvania their grateful acknowledgments for the abounding hospitality with which they have been received, and for the ample facilities provided for their meetings.

Resolved, That the Academy cordially thank the Historical Society of Pennsylvania for the reception so gracefully offered, and which afforded the Academy an opportunity to make the acquaintance of the members of one of the most distinguished historical associations in our country.

The special session then adjourned.

Respectfully submitted.

O. C. MARSH,
President of the National Academy of Sciences.

APPENDICES.

APPENDIX A.

AN ACT to incorporate the National Academy of Sciences.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That Louis Agassiz, Massachusetts; J. H. Alexander, Maryland; S. Alexander, New Jersey; A. D. Bache, at large; F. A. P. Barnard, at large; J. G. Barnard, United States Army, Massachusetts; W. H. C. Bartlett, United States Military Academy, Missouri; U. A. Boyden, Massachusetts; Alexis Caswell, Rhode Island; William Chauvenet, Missouri; J. H. C. Coffin, United States Naval Academy, Maine; J. A. Dahlgren, United States Navy, Pennsylvania; J. D. Dana, Connecticut; Charles H. Davis, United States Navy, Massachusetts; George Engelmann, Saint Louis, Mo.; J. F. Frazer, Pennsylvania; Wolcott Gibbs, New York; J. M. Gilliss, United States Navy, District of Columbia; A. A. Gould, Massachusetts; B. A. Gould, Massachusetts; Asa Gray, Massachusetts; A. Guyot, New Jersey; James Hall, New York; Joseph Henry, at large; J. E. Hilgard, at large, Illinois; Edward Hitchcock, Massachusetts; J. S. Hubbard, United States Naval Observatory, Connecticut; A. A. Humphreys, United States Army, Pennsylvania; J. L. LeConte, United States Army, Pennsylvania; J. Leidy, Pennsylvania; J. P. Lesley, Pennsylvania; M. F. Longstreth, Pennsylvania; D. H. Mahan, United States Military Academy, Virginia; J. S. Newberry, Ohio; H. A. Newton, Connecticut; Benjamin Pierce, Massachusetts; John Rodgers, United States Navy, Indiana; Fairman Rogers, Pennsylvania; R. E. Rogers, Pennsylvania; W. B. Rogers, Massachusetts; L. M. Rutherford, New York; Joseph Saxton, at large; Benjamin Silliman, Connecticut; Benjamin Silliman, junior, Connecticut; Theodore Strong, New Jersey; John Torrey, New York; J. G. Totten, United States Army, Connecticut; Joseph Winlock, United States Nautical Almanac, Kentucky; Jeffries Wyman, Massachusetts; J. D. Whitney, California; their associates and successors duly chosen, are hereby incorporated, constituted, and declared to be a body corporate, by the name of the National Academy of Sciences.

SEC. 2. *And be it further enacted,* That the National Academy of Sciences shall consist of not more than fifty ordinary members, and the said corporation hereby constituted shall have power to make its own

organization, including its constitution, by-laws, and rules and regulations; to fill all vacancies created by death, resignation, or otherwise; to provide for the election of foreign and domestic members, the division into classes, and all other matters needful or usual in such institution, and to report the same to Congress.

SEC. 3. *And be it further enacted*, That the National Academy of Sciences shall hold an annual meeting at such place in the United States as may be designated, and the Academy shall, whenever called upon by any Department of the Government, investigate, examine, experiment, and report upon any subject of science or art, the actual expense of such investigations, examinations, experiments, and reports to be paid from appropriations which may be made for the purpose, but the Academy shall receive no compensation whatever for any services to the Government of the United States.

Approved, March 3, 1863.

AN ACT to amend the act to incorporate the National Academy of Sciences.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the act to incorporate the National Academy of Sciences, approved March three, eighteen hundred and sixty-three, be, and the same is hereby, so amended as to remove the limitation of the number of ordinary members of said Academy as provided in said act.

Approved, July 14, 1870.

DEPARTMENT OF STATE, *June 10, 1882.*

True copies.

SEVELLON A. BROWN,
Chief Clerk.

AN ACT to authorize the National Academy of Sciences to receive and hold trust funds for the promotion of science, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the National Academy of Sciences, incorporated by the act of Congress approved March third, eighteen hundred and sixty-three, and its several supplements, be, and the same is hereby, authorized and empowered to receive bequests and donations, and hold the same in trust, to be applied by the said Academy in aid of scientific investigations, and according to the will of the donors.

Approved, June 20, 1884.

DEPARTMENT OF STATE, *June 24, 1884.*

A true copy.

SEVELLON A. BROWN,
Chief Clerk.

APPENDIX B.

CONSTITUTION AND RULES OF THE NATIONAL ACADEMY OF SCIENCES.

As amended and adopted April 17, 1872, and further amended April 20, 1875, April 21, 1881, April 19, 1882, April 18, 1883, and April 19, 1888.

PREAMBLE.

Empowered by the act of incorporation enacted by Congress, and approved by the President of the United States, on the 3d day of March, A. D. 1863, and in conformity with the amendment to said act, approved July 14, 1870, the National Academy of Sciences adopts the following amended constitution and rules:

ARTICLE 1.—OF MEMBERS.

SEC. 1. The Academy shall consist of members, honorary members, and foreign associates. Members must be citizens of the United States.

SEC. 2. Members who, from age or inability to attend the sessions of the Academy, wish to resign the duties of active membership, may, at their own request, be transferred to the roll of honorary members by a vote of the Academy.

SEC. 3. The Academy may elect fifty foreign associates.

SEC. 4. Honorary members and foreign associates shall have the privilege of attending the meetings, and of reading and communicating papers to the Academy, but shall take no part in its business, shall not be subject to its assessments, and shall be entitled to a copy of the publications of the Academy.

ARTICLE II.—OF THE OFFICERS.

SEC. 1. The officers of the Academy shall be a president, a vice-president, a foreign secretary, a home secretary, and a treasurer, all of whom shall be elected for a term of six years, by a majority of votes present, at the first stated session after the expiration of the current terms, provided that existing officers retain their places until their successors are elected. In case of a vacancy, the election for six years shall be held in the same manner at the session when such vacancy occurs, or at the next stated session thereafter, as the Academy may direct. A vacancy in the office of treasurer or home secretary may, however, be filled by appointment of the president of the Academy until the next stated session of the Academy.

SEC. 2. The officers of the Academy, together with six members to be elected by the Academy at the first stated session in each year, shall constitute a council for the transaction of such business as may be assigned to them by the constitution of the Academy.

SEC. 3. The president of the Academy, or, in case of his absence or inability to act, the vice-president, shall preside at the meetings of the Academy and of the council; shall name all committees except such as are otherwise especially provided for; shall refer investigations required by the Government of the United States to members especially conversant with the subjects, and report thereon to the Academy at its session next ensuing; and, with the council, shall direct the general business of the Academy.

It shall be competent for the president, in special cases, to call in the aid, upon committees, of experts or men of special attainments, not members of the Academy.

SEC. 4. The foreign and home secretaries shall conduct the correspondence proper to their respective departments, advising with the president and council in cases of doubt, and reporting their action to the Academy at one of the stated sessions in each year.

It shall be the duty of the home secretary to give notice to the members of the place and time of all meetings, of all nominations for membership, and of all proposed amendments to the constitution.

The minutes of each session shall be duly engrossed before the next stated session, under the direction of the home secretary.

SEC. 5. The treasurer shall attend to all receipts and disbursements of the Academy, giving such bond and furnishing such vouchers as the council may require. He shall collect all dues from members, and keep a set of books showing a full account of receipts and disbursements. He shall present a general report at the April session. He shall be the custodian of the corporate seal of the Academy.

ARTICLE III.—OF THE MEETINGS.

SEC. 1. The Academy shall hold one stated session in each year, in the city of Washington, on the third Tuesday in April, and another may be held at such place and time as the council shall determine.

Special sessions of the Academy may be called, by order of eight members of the council, at such place and time as may be designated in the call.

Scientific sessions of the Academy may be held at times and places to be designated by a majority of the council.

SEC. 2. The names of the members present at each daily meeting shall be recorded in the minutes; and the members present at any meeting shall constitute a quorum for the transaction of business.

SEC. 3. Scientific meetings of the Academy, unless otherwise ordered by a majority of the members present, shall be open to the public; those for the transaction of business, closed.

SEC. 4. The stated meetings of the council shall be held during the stated or special sessions of the Academy. Special meetings may be convened at the call of the president and two members of the council, or of four members of the council.

SEC. 5. No member who has not paid his dues shall take part in the business of the Academy.

ARTICLE IV.—OF ELECTIONS AND RESIGNATIONS.

SEC. 1. All elections shall be by ballot, and each election shall be held separately, unless otherwise ordered by this constitution.

SEC. 2. The time for holding an election for officers shall be fixed by the Academy at least one day before the election is held.

SEC. 3. The six additional members of the council shall be elected on any day after the first of the first stated session in each year, by each voter inscribing six names on his ballot, and those six who have received more votes than any others shall be declared elected. If two or more names have received the lowest number of votes that would elect, additional balloting shall be had for as many members as remain each time to be elected until the number is full.

The term of the members so elected shall commence at the close of the session at which they are elected, and continue until the close of the first stated session in the next year.

SEC. 4. Nominations of members may be made in writing, signed by any five members of the Academy, at any stated session, to be voted on at the next stated session held in Washington, and each nomination shall, at the time of election, be accompanied by a written list of the original works of the nominee.

SEC. 5. Elections for membership shall be held in the following manner: Each member may inscribe on a ballot not more than five names of nominees selected from the list. Absent members may send such ballots to the home secretary. From the seven names receiving the highest number of votes in this preference ballot, the members present may proceed to elect new members in the following manner: At each ballot, each member present may vote for not exceeding three persons, and the person receiving the highest number of votes shall be declared elected, provided that he received two-thirds of the votes cast and that his name appear on not less than twenty ballots; and provided further, that the number of members of the Academy be not already one hundred or over, in which case to be declared to be elected he must receive four-fifths of the votes cast, and his name must appear on at least twenty-five ballots.

Should several candidates have the same minimum number of votes on the preference list, the requisite number for completing the list shall be selected from them by a two-thirds vote of the members present.

Election of members shall be held only at the regular stated session of each year held in Washington, and not more than five members shall be elected at that session.

Before and during elections, a discussion of the merits of nominees will be in order.

The election of members may be suspended at any time by a majority vote of the members present.

SEC. 6. Every member elect shall accept his membership, personally or in writing, before the close of the next stated session after the date of his election. Otherwise, on proof that the secretary has formally notified him of his election, his name shall not be entered on the roll of members.

SEC. 7. Foreign associates may be nominated by a committee of five members to be appointed for that purpose by the president, and elected at any stated session by a two-thirds vote of the members present. The election shall be had by each member indicating on a ballot those names for which he votes, and those nominees whose names appear on two-thirds of the ballots shall be declared elected.

SEC. 8. A diploma, with the corporate seal of the Academy and the signatures of the officers, shall be sent by the appropriate secretary to each member on his acceptance of his membership, and to foreign associates on their election.

SEC. 9. Resignations shall be addressed to the president and acted on by the Academy.

ARTICLE V.—OF SCIENTIFIC COMMUNICATIONS, PUBLICATIONS, AND REPORTS.

SEC. 1. Communications on scientific subjects shall be read at scientific meetings of the Academy, and papers by any member may be read by the author, or by any other member, notice of the same having been previously given to the secretary.

SEC. 2. Any member of the Academy may read a paper from a person who is not a member, and shall not be considered responsible for the facts or opinions expressed by the author, but shall be held responsible for the propriety of the paper.

Persons who are not members may read papers on invitation of the president, with the advice of the council.

SEC. 3. The Academy may provide for the publication, under the direction of the council, of proceedings, memoirs, and reports.

SEC. 4. Propositions for investigations or reports by the Academy shall be submitted to the council for approval, except those requested by the Government of the United States, which shall be acted on by the president, who will in such cases report their results to the Government as soon as obtained, and to the Academy at its next following stated session.

SEC. 5. The advice of the Academy shall be, at all times, at the disposition of the Government, upon any matter of science or art within its scope.

SEC. 6. An annual report to be presented to Congress shall be prepared by the president, and before its presentation submitted by him, first to the council, and afterwards to the Academy, at one of the stated sessions.

SEC. 7. Medals and prizes may be established, and the means of bestowing them accepted by the Academy, upon the recommendation of the council, by whom all the necessary arrangements for their establishment and award shall be made.

Bequests and trusts having for their object the advancement of science may also be accepted and administered by the Academy.

ARTICLE VI.—OF THE PROPERTY OF THE ACADEMY.

SEC. 1. All investments shall be made by the treasurer, in the corporate name of the Academy, in stocks of the United States.

SEC. 2. No contract shall be binding upon the Academy which has not been first approved by the council.

SEC. 3. The assessments required for the support of the Academy shall be fixed by the Academy on the recommendation of the council.

ARTICLE VII.—OF ADDITIONS AND AMENDMENTS.

Additions and amendments to the constitution shall be made only at a stated session of the Academy. Notice of a proposition for such a change must be given at a stated session, and shall be referred to the council, which may amend the proposition, and shall report thereon to the Academy at the same session. Its report shall be considered by the Academy in committee of the whole for amendment.

The proposition as amended, if adopted in committee of the whole, shall be voted on at the next stated session, and if it receives two-thirds of the votes cast, it shall be declared adopted.

Absent members may send their votes on pending changes in the constitution to the home secretary in writing, and such votes shall be counted as if the member were present.

RULES.

I. In the absence of any officer, a member shall be chosen to perform his duties temporarily, by a plurality of *viva voce* votes upon open nominations.

II. On the first day of each stated session, immediately after calling the roll of members, a recording secretary shall be elected by a plurality of members present, to assist the home secretary in keeping the records of the session.

III. The accounts of the treasurer shall be referred to an auditing committee of three members, to be appointed by the president at the meeting at which the accounts are presented; which committee shall report before the close of that session, and shall then be discharged.

The bonds, securities, and other property owned or held in trust by the Academy shall be inspected and verified by a committee to be annually appointed by the president. The report of this committee shall be presented to the Academy at its first stated session in each year, and referred with the accounts to the auditing committee.

IV. A committee of arrangements consisting of five members shall be appointed by the president for each stated session of the Academy. This committee shall meet not less than two weeks previous to each session. It shall be in session during the meetings to make arrangements for the reception of the members; to arrange the business of each day; to receive the titles of papers, reports, etc.; and to arrange the order of reading, and, in general, to attend to all business and scientific arrangements.

It shall be the duty of the committee of arrangements to fix the length of time to be devoted to reading of all papers submitted, and to limit the time to be occupied in their discussion.

V. At the meetings the order of business shall be as follows :

1. Chair taken by the president, or, in his absence, by the vice-president.

2. Roll of members called by home secretary.

3. Minutes of the preceding meeting read and approved.

4. Stated business.

5. Reports of president, secretaries, treasurer, and committees.

6. Business from council.

7. Other business.

8. On the last day of the session the rough minutes of that day's proceedings are to be read for correction.

VI. The rules of order of the Academy shall be those of the Senate of the United States, unless suspended by unanimous consent.

VII. Unless otherwise ordered by the Academy, the scientific meetings shall be convened at noon.

VIII. The death of members shall be announced by the president on the last day of any session, when a member shall be selected by the president to furnish a biographical notice of the deceased at the next stated session. If such notice be not then furnished, another member may be selected by the president in place of the first, and so on until the duty is performed.

IX. The secretaries will receive memoirs at any time, and report the date of their reception at the next session. But no memoir shall be published unless it has been read before the Academy.

X. Memoirs shall date in the records of the Academy from the date of their presentation to the Academy, and the order of their presentation shall be that in which they were registered, unless changed by consent of the author.

XI. Papers from persons not members read before the Academy and intended for publication shall be referred, at the meeting at which they

are read, to a committee of members competent to judge whether the paper is worthy of publication. Such committee shall report to the Academy as early as practicable, and not later than the next stated session.

XII. An annual of the Academy shall be prepared and published by the secretaries.

XIII. The printing of the Academy shall be under the charge of the committee of publication, to consist of the home secretary and four other members to be named by the president with the advice and consent of the council.

XIV. The annual report of the Academy may be accompanied by a memorial to Congress in regard to such investigations and other subjects as may be deemed advisable, recommending appropriations therefor when necessary.

XV. The proper secretary shall acknowledge all donations made to the Academy, and shall report them at the next stated session.

XVI. The books, apparatus, archives, and other collections of the Academy shall be deposited in some safe place in the city of Washington. A list of the articles so deposited shall be kept by the home secretary, who is authorized to employ a clerk to take charge of them.

XVII. A stamp corresponding to the corporate seal of the Academy shall be kept by the secretaries, who shall be responsible for the due marking of all books and other objects to which it is applicable.

Labels or other proper marks of similar device shall be placed upon objects not admitting of the stamp.

XVIII. The treasurer is authorized to defray, when approved by the president, all the proper expenses of committees appointed to make scientific investigations at the request of Departments of the Government, and in each case to look to the Department requesting the investigation for reimbursement to the Academy.

XIX. Nominations for membership should state the full name, residence, the official position, and the special scientific studies of the candidate. A form of nomination shall be prepared by the home secretary.

XX. At least 60 days before the election, the members signing the nomination should furnish the home secretary with a sufficient number of printed copies of a list of the more important original works of the nominee to enable the secretary to furnish a copy to each member of the Academy.

XXI. Ballots for election of members may be sent by sealing them up in a blank envelope, and inclosing this in another, across the back of which is written the name of the sender, and which is addressed to the home secretary; such envelopes will be opened only by the tellers.

XXII. All discussions as to the claims and qualifications of nominees at meetings of the Academy will be held strictly confidential, and remarks and criticisms then made may be communicated to no person who was not a member of the Academy at the time of the discussion.

XXIII. Any rule of the Academy may be amended, suspended, or repealed on the written motion of any two members, signed by them, and presented at a stated session of the Academy, provided the same shall be approved by a majority of the members present.

By a resolution adopted January 12, 1864, the president is, *ex officio*, a member of all Government committees of the Academy.

APPENDIX C.

ORGANIZATION OF THE ACADEMY, 1889.

	Expiration of term.
MARSH, O. C., <i>President</i>	April, 1895
LANGLEY, S. P., <i>Vice-President</i>	April, 1895
GIBBS, WOLCOTT, <i>Foreign Secretary</i>	April, 1892
HALL, A., <i>Home Secretary</i>	April, 1895
BILLINGS, JOHN S., <i>Treasurer</i>	April, 1893

ADDITIONAL MEMBERS OF COUNCIL, 1889-'90.

BRUSH, G. J.	NEWCOMB, S.
GOULD B. A.	REMSEN, IRA.
MEIGS, M. C.	WALKER, F. A.

COMMITTEES OF THE ACADEMY.

On Ways and Means to Provide a Fund for the Academy.

ROGERS, FAIRMAN, <i>Chairman</i> .	MARSH, O. C.
CHANDLER, C. F.	MITCHELL, S. WEIR.
PUMPELLY, R.	

On Weights, Measures, and Coinage.

GIBBS, WOLCOTT.	NEWCOMB, S.
HILGARD, J. E.	NEWTON, H. A.
MEIGS, M. C.	PEIRCE, C. S.
TROWBRIDGE, W. P.	

On the Election of Foreign Associates.

GIBBS, WOLCOTT, <i>Chairman</i> .	GOULD, B. A.
DANA, J. D.	HALL, A.
NEWCOMB, S.	

On Reserving Public Lands on and near Mount Whitney, California, for Scientific Purposes.

LANGLEY, S. P., <i>Chairman</i> .	BREWER, W. H.
POWELL, J. W.	

On Publication.

THE HOME SECRETARY.	COFFIN, J. H. C.
BILLINGS, J. S.	NEWCOMB, S.
POWELL, J. W.	

On Publications of the Academy.

GILL, T.

On the Relation of the Academy to the Government.

THE PRESIDENT.
VICE-PRESIDENT.
SECRETARIES.

COFFIN, J. H. C.
HILGARD, J. E.
MEIGS, M. C.

POWELL, J. W.

TRUST FUNDS.

Board of Direction of the Bache Fund.

DANA, J. D.

HILGARD, J. E.

GIBBS, W.

Board of Trustees of the Watson Fund.

NEWCOMB, S., *Chairman.*

COFFIN, J. H. C.

GOULD, B. A.

The Henry Draper Fund.

BARKER, G. F., *Chairman.*

NEWCOMB, S.

GIBBS, W.

WRIGHT, A. W.

YOUNG, C. A.

The J. Lawrence Smith Fund.

GIBBS, WOLCOTT, *Chairman.*

HALL, A.

BRUSH, G. J.

PUMPELLE, R.

RUTHERFORD, L. M.

MEMBERS OF THE NATIONAL ACADEMY OF SCIENCES, JANUARY, 1890.

		Date of Election.
ABBE, CLEVELAND	Washington, D. C.	1879
ABBOTT, HENRY L., U. S. A.	Army Building, New York City.	1872
ALLEN, J. ASAPH	American Museum, New York City.	1876
BARKER, GEORGE F.	3909 Locust St., Philadelphia, Pa.	1876
BARTLETT, WILLIAM H. C.	75 Locust Hill Ave., Yonkers, N. Y.	—
BELL, A. GRAHAM	Washington, D. C.	1883
BILLINGS, JOHN S., U. S. A.	Washington, D. C.	1883
BOSS, LEWIS	Albany, N. Y.	1889
BOWDITCH, HENRY P.	Cambridge, Mass.	1887
BREWER, WILLIAM H.	New Haven, Conn.	1880
BROOKS, W. K.	Johns Hopkins University, Baltimore, Md.	1884
BROWN-SEQUARD, CHARLES E.	Paris, France.	1868
BRUSH, GEORGE J.	New Haven, Conn.	1868
CHANDLER, CHARLES F.	New York City.	1874
CHANDLER, SETH C.	16 Craigie St., Cambridge, Mass.	1888
COMSTOCK, CYRUS B., U. S. A.	Whitestone, Long Island, N. Y.	1884
COOKE, JOSIAH P.	Cambridge, Mass.	1872
COPE, EDWARD D.	2100 Pine St., Philadelphia, Pa.	1872
COUES, ELLIOTT	Washington, D. C.	1877
CRAFTS, JAMES M.	École des Mines, Paris, France.	1872
DANA, EDWARD S.	New Haven, Conn.	1884
DANA, JAMES D.	New Haven, Conn.	—
DAVIDSON, GEORGE	San Francisco, Cal.	1874
DUTTON, CLARENCE E., U. S. A.	Washington, D. C.	1884
FARLOW, W. G.	Cambridge, Mass.	1879
FERREL, WILLIAM	1641 Broadway, Kansas City, Mo.	1868
GENTH, FREDERICK A.	W. Philadelphia, Pa.	1872
GIBBS, JOSIAH WILLARD	New Haven, Conn.	1879
GIBBS, WOLCOTT	Newport, R. I.	—
GILBERT, GROVE K.	Washington, D. C.	1883
GILL, THEODORE N.	Washington, D. C.	1873
GOODE, G. BROWN	Washington, D. C.	1888
GOULD, BENJAMIN A.	Cambridge, Mass.	—
HAGUE, ARNOLD	U. S. Geological Survey, Washington, D. C.	1885
HALL, ASAPH, U. S. N.	Washington, D. C.	1875
HALL, JAMES	Albany, N. Y.	—
HASTINGS, CHARLES S.	New Haven, Conn.	1889
HILGARD, EUGENE W.	Oakland, Cal.	1872
HILGARD, JULIUS E.	Washington, D. C.	—
HILL, GEORGE W.	Washington, D. C.	1874
HILL, HENRY B.	Cambridge, Mass.	1883
HOLDEN, EDWARD S.	San José, California.	1885
HUNT, T. STERRY	Montreal, Canada.	1873

		Date of Election.
HYATT, ALPHEUS.....	<i>Soc. of Nat. History, Boston, Mass.</i>	1875
JACKSON, CHARLES L.....	<i>Cambridge, Mass.</i>	1883
JOHNSON, SAMUEL W.....	<i>New Haven, Conn.</i>	1866
KING, CLARENCE.....	<i>62 Cedar St., New York City.</i>	1876
LANGLEY, SAMUEL P.....	<i>Washington, D. C.</i>	1876
LEIDY, JOSEPH.....	<i>Philadelphia, Pa.</i>	1884
LESLEY, J. PETER.....	<i>1008 Clinton St., Philadelphia, Pa.</i>	—
LECONTE, JOHN.....	<i>Berkeley, Cal.</i>	1878
LECONTE, JOSEPH.....	<i>Berkeley, Cal.</i>	1875
LOVERING, JOSEPH.....	<i>Cambridge, Mass.</i>	1873
MARSH, O. C.....	<i>New Haven, Conn.</i>	1874
MAYER, ALFRED M.....	<i>Hoboken, N. J.</i>	1872
MEIGS, MONTGOMERY C., U. S. A.....	<i>Washington, D. C.</i>	1865
MENDENHALL, THOMAS C.....	<i>Washington, D. C.</i>	1887
MICHAEL, ARTHUR.....	<i>Somerville, Mass.</i>	1889
MICHELSON, ALBERT A.....	<i>Worcester, Mass.</i>	1888
MITCHELL, HENRY.....	<i>Boston, Mass.</i>	1885
MITCHELL, S. WEIR.....	<i>1524 Walnut St., Philadelphia, Pa.</i>	1865
MORSE, EDWARD S.....	<i>Salem, Mass.</i>	1876
MORTON, HENRY.....	<i>Hoboken, N. J.</i>	1874
NEWBERRY, J. S.....	<i>New York City.</i>	—
NEWCOMB, SIMON, U. S. N.....	<i>Washington, D. C.</i>	1869
NEWTON, H. A.....	<i>New Haven, Conn.</i>	—
NEWTON, JOHN, U. S. A.....	<i>New York City.</i>	1876
OLIVER, JAMES E.....	<i>Ithaca, N. Y.</i>	1872
PACKARD, A. S.....	<i>Providence, R. I.</i>	1872
PIERCE, CHARLES S.....	<i>U. S. Coast Survey, Washington, D. C.</i>	1877
PETERS, C. H. F.....	<i>Clinton, N. Y.</i>	1876
PICKERING, EDWARD C.....	<i>Cambridge, Mass.</i>	1873
POWELL, JOHN W.....	<i>Washington, D. C.</i>	1880
PUMPELLY, RAPHAEL.....	<i>Gibbs Ave., Newport, R. I.</i>	1872
PUTNAM, FREDERICK W.....	<i>Cambridge, Mass.</i>	1885
REMSSEN, IRA.....	<i>Johns Hopkins University, Baltimore, Md.</i>	1882
ROGERS, FAIRMAN.....	<i>147 S. Fourth St., Philadelphia, Pa.</i>	—
ROGERS, WILLIAM A.....	<i>Waterville, Me.</i>	1885
ROOD, OGDEN N.....	<i>New York City.</i>	1865
ROWLAND, HENRY A.....	<i>Johns Hopkins University, Baltimore, Md.</i>	1881
RUTHERFORD, LEWIS M.....	<i>175 Second Ave., New York City.</i>	—
SCHOTT, CHARLES A.....	<i>Washington, D. C.</i>	1872
SCUDDER, SAMUEL H.....	<i>Cambridge, Mass.</i>	1877
SELLERS, WILLIAM.....	<i>1600 Hamilton St., Philadelphia, Pa.</i>	1873
SMITH, SIDNEY I.....	<i>New Haven, Conn.</i>	1884
TROWBRIDGE, JOHN.....	<i>Cambridge, Mass.</i>	1878
TROWBRIDGE, WILLIAM P.....	<i>New York City.</i>	1872
TRUMBULL, J. H.....	<i>Hartford, Conn.</i>	1872
VERRILL, A. E.....	<i>New Haven, Conn.</i>	1872
WALKER, FRANCIS A.....	<i>Boston, Mass.</i>	1878
WATSON, SERENO.....	<i>Cambridge, Mass.</i>	1889
WHITE, CHARLES A.....	<i>Washington, D. C.</i>	1889
WOOD, HORATIO C.....	<i>1925 Chestnut St., Philadelphia, Pa.</i>	1879
WRIGHT, ARTHUR W.....	<i>New Haven, Conn.</i>	1881
YOUNG, CHARLES A.....	<i>Princeton, N. J.</i>	1872

HONORARY MEMBERS.

AGASSIZ, ALEXANDER.....	<i>Cambridge, Mass.</i>
LONGSTRETH, MIERS F.....	<i>Derby, Pa.</i>
LYMAN, THEODORE.....	<i>Brookline, Mass.</i>

DECEASED MEMBERS.

	Date of Death.
*AGASSIZ, LOUIS	Dec. 14, 1873
*ALEXANDER, J. H.....	March 2, 1867
*ALEXANDER, STEPHEN	June 25, 1883
*BACHE, ALEXANDER DALLAS.....	Feb. 14, 1867
*BAIRD, SPENCER F.....	Aug. 19, 1887
BARNARD, J. G.....	May 14, 1882
BARNARD, F. A. P.....	April 27, 1889
*CASWELL, ALEXIS	Jan. 8, 1887
*CHAUVENET, WILLIAM.....	Dec. 13, 1870
*CLARK, HENRY JAMES.....	July, 1, 1873
COFFIN, JAMES H.....	Jan. 6, 1873
COFFIN, JOHN H. C.....	Jan. 9, 1890
COOK, GEORGE H.....	Sept. 22, 1889
DALTON, J. C.....	Feb. 2, 1889
DAVIS, CHARLES H.....	Feb. 18, 1877
*DRAPER, HENRY	Nov. 20, 1882
*DRAPER, JOHN W.....	Jan. 4, 1882
*EADS, JAMES B.....	Mar. 8, 1887
ENGELMANN, GEORGE	Feb. 11, 1884
*FRAZER, JOHN FRIES	Oct. 12, 1872
*GABB, WILLIAM M.....	May 30, 1878
*GILLISS, JAMES MELVILLE	Feb. 9, 1865
*GOULD, AUGUSTUS A.....	Sept. 15, 1866
*GRAY, ASA	Jan. 30, 1888
*GUYOT, ARNOLD	Feb. 8, 1884
HAYDEN, F. V.....	Dec. 22, 1887
*HENRY, JOSEPH	May 13, 1878
*HADLEY, JAMES.....	Aug. 1, 1864
*HITCHCOCK, EDWARD.....	Feb. 27, 1864
*HOLBROOK, J. E.....	Sept. 8, 1871
*HUBBARD, J. S.....	Aug. 16, 1863
*HUMPHREYS, A. A.....	Nov. 28, 1883
*HALDEMAN, S. S.....	Sept. 10, 1880
*KIRTLAND, JARED P.....	Dec. 10, 1877
*LANE, J. HOMER	——, 1880
*LECONTE, JOHN L.....	Nov. 15, 1883
LESQUEREUX, LEO.....	Oct. 25, 1889
LOOMIS, ELIAS.....	Aug. 16, 1889
*MAHAN, D. H.....	Sept. 16, 1871
*MARSH, G. P.....	July 23, 1882
*MEEK, F. B.....	Dec. 21, 1877
*MORGAN, LEWIS H.....	Dec. 14, 1881
*NORTON, WILLIAM A.....	Sept. 21, 1883
*POURTALES, L. F.....	July 17, 1880
RODGERS, JOHN	May 5, 1882
ROGERS, ROBERT E.....	Sept. 7, 1884
*ROGERS, WILLIAM B.....	May 30, 1882
*SAXTON, JOSEPH.....	Oct. 26, 1873
*SILLIMAN, BENJ., Sr.....	Nov. 24, 1864

	Date of Death.
SILLIMAN, BENJ., Jr	Jan. 14, 1885
*SMITH, J. LAWRENCE	Oct. 12, 1883
*STIMPSON, WILLIAM	May 26, 1873
*STRONG, THEODORE	Feb. 1, 1869
*SULLIVANT, W. S.	April 30, 1873
*TORREY, JOHN	March 10, 1873
*TOTTEN, J. G	April 22, 1864
*TUCKERMAN, EDWARD	March 15, 1886
*WARREN, G. K	Aug. 8, 1882
*WATSON, JAMES C	Nov. 23, 1880
*WINLOCK, JOSEPH	Jan. 11, 1875
*WOODWARD, J. J., U. S. A.	Aug. 17, 1884
WORTHEN, A. H.	May 6, 1888
*WYMAN, JEFFRIES	Sept. 4, 1874

FOREIGN ASSOCIATES.

BUNSEN, ROBERT W	Heidelberg.
AIRY, SIR GEORGE B	Greenwich.
OWEN, SIR RICHARD	London.
BURMEISTER, C. H. C	Buenos Ayres.
STRUVE, OTTO VON	Pulkova.
ADAMS, J. C	Cambridge.
CAYLEY, ARTHUR	Cambridge.
HELMHOLTZ, BARON H. VON	Berlin.
PASTEUR, LOUIS	Paris.
STOKES, SIR GEORGE G	Cambridge.
SYLVESTER, J. J	Oxford.
HOOKE, SIR J. D	Kew.
THOMSON, SIR WILLIAM	Glasgow.
AUWERS, ARTHUR	Berlin.
BERTRAND, J. L. F	Paris.
HUXLEY, T. H	London.
VIRCHOW, RUDOLPH VON	Berlin.
BERTHELOT, M. P. E	Paris.
DE CANDOLLE, ALPHONSE	Geneva.
KÖLLIKER, ALBERT VON	Würzburg.
RICHTHOFEN, F. VON	Berlin.
HOFMANN, A. W	Berlin.
IBAÑEZ, CARLOS	Madrid.

DECEASED FOREIGN ASSOCIATES.

SIR WM. ROWAN HAMILTON.
 CARL ERNST VON BAER.
 HENRY MILNE-EDWARDS.
 MICHAEL FARADAY.
 L. ELIE DE BEAUMONT.
 SIR DAVID BREWSTER.
 G. A. A. PLANA.
 F. W. A. ARGELANDER.
 FRIEDRICH WÖHLER.
 J. B. DUMAS.
 J. B. J. D. BOUSSINGAULT.
 M. E. CHEVREUL.

MICHEL CHASLES.
 SIR RODERICK I. MURCHISON.
 VICTOR REGNAULT.
 H. W. DOVE.
 C. A. F. PETERS.
 JUSTUS VON LIEBIG.
 ALEXANDER BRAUN.
 JOACHIM BARRANDE.
 ADOLPHE WÜRTZ.
 THEODORE VON OPPOLZER.
 G. R. KIRCHOFF.
 RUDOLPH CLAUSIUS.

JAMES P. JOULE.

* Biographical notices have been presented of those designated by a *.

APPENDIX D.

TRUST FUNDS OF THE ACADEMY.

The National Academy of Sciences has been authorized by Congress to hold trust funds, and up to the present time, five gifts of importance have been received. The proceeds of four of these are available, and have already rendered much aid in promoting original research in science. The increasing usefulness of these various gifts makes it desirable to place together on record the original instruments of trust, and an account of the grants made from these funds since they were received by the Academy.

THE BACHE FUND.

The first important gift received by the Academy was from its first president, Alexander Dallas Bache, who left the greater part of his property in trust to the Academy, at his death in 1867. The income of the fund has been available for about 18 years, and the special grants made are stated in the report which follows the various instruments of gift relating to the trust.

EXTRACT FROM THE WILL OF ALEXANDER DALLAS BACHE.

March 18, 1862.

Item: As to all the rest and residue of my estate, including the sum of \$5,000 placed at the disposal of my wife in case she should not desire to make any disposition of the same, I direct my executors hereinafter named to apply the income thereof, after the death of my wife, according to and under the direction of Joseph Henry, of Washington, Louis Agassiz and Benjamin Peirce, of Harvard College, Massachusetts, to the prosecution of researches in physical and natural science by assisting experimentalists and observers in such manner and in such sums as shall be agreed upon by the three above-named gentlemen, or any two of them, whom I constitute a board of direction for the application of the income of my residuary estate for the above objects after the death of my said wife. The class of subjects to be selected by this board and the results of such observations and experiments to be published at the expense of my trust estate under their directions out of the income thereof but without encroaching on the principal.

In case of the death or inability to act of all or any of the three gentlemen I have named, in my wife's lifetime, my will is that she shall supply their places in the board of direction by an instrument of writing, either testamentary or otherwise, desiring that, in the selection of the persons to administer the income of the trust fund hereby created, she will have regard to the selection of persons whose attention has been directed to the same branches of science as those I have named, and so that each of

the departments of physics, mathematics, and natural history shall be represented in the board. In case of any vacancy occurring in the board of direction after its organization, and after the death of my wife, by reason of the death, inability, or refusal to act, or resignation of any of its members, my will is that the surviving or remaining member or members, for the time being, shall have power to fill vacancies so occurring in the board by the selection of other person or persons to fill such vacancies, and so on from time to time as vacancies occur. My intention being that the board of direction shall have power to continue its existence, and to filling all vacancies occurring in their body from time to time, I direct that a minute of their proceedings be kept, and that the appointment of any member by the board shall be notified in writing to the trustees, for the time being, of my residuary estate. In the event of any failure of the board, for the time being, to direct the application of the income of my said residuary estate, or to continuing its existence by filling vacancies occurring in their body, my will is that the application of the income thereof for the purposes and objects declared in this clause of my will shall be made by the trustees, under the direction of the American Philosophical Society of Philadelphia.

* * * * *

Item : I hereby nominate and appoint my friends, Peter McCall, esq., and Morton P. Henry, esq., of the city of Philadelphia, and the survivor of them, to be the executors of and trustees under this my last will and testament.

CODICIL, JULY 15, 1863.

Item : I give and devise to my sister, Sally Franklin Wainwright, the house purchased by me, situated No. 396 West Twentieth Street, in the city of Washington, between G and H streets, to be held and enjoyed by her during the term of her natural life. After her death I direct the said house shall pass with the residue of my estate (subject to a life estate of my wife, Nancy Clarke Bache, therein, in case she should survive my sister) to the "National Academy of Sciences," upon the trusts set forth as to the said residue of my estate.

* * * * *

Item : My will is that, upon the death of my wife, all the rest and residue of my estate shall be paid over to and vest in the corporation of the National Academy of Sciences, incorporated by act of Congress, passed the 3d day of March, A. D. 1863, whom I hereby appoint trustees in the place of my said executors under the fourth clause of my said will, to apply the income, according to the directions in the said clause contained, to the prosecution of researches in physical and natural science by assisting experimentalists and observers in such manner and in such sums as shall be agreed upon by the board of direction in the said clause named. My will further is, that, in case of any failure of the board for the time being to direct the application of the income of my residuary estate, or to continue its existence by filling vacancies occurring in their body, the application of the income thereof for the purposes and objects declared in the said clause shall be made under the direction of the National Academy of Sciences instead of the American Philosophical Society, of Philadelphia. In all other respects the said application of the income to the purposes aforesaid to be made by the same persons and under the same rules as I have prescribed in the said clause of my will.

Duly sworn to before Samuel Lloyd, February 27, 1867, in the city and county of Philadelphia.

BACHE TRUST FUND.

By the above will of Prof. A. D. Bache, his property, after the death of Mrs. Bache, passes to the National Academy of Sciences as a trust fund, the income of which is to be applied to the prosecution of

researches in physics and natural science, in such manner as shall be agreed upon by the board of direction, appointed by the fourth clause of his will. On the death of Mrs. Bache, which occurred in February, 1870, the executors proceeded to settle the estate. After paying various legacies, the amount of the trust fund was about \$41,250.

The treasurer was given full power, by a vote of the Academy, to receive the trust fund and to act as attorney in fact for the Academy in all matters pertaining thereto. At his own suggestion, he was also required to give bonds for the faithful discharge of his duty in the sum of \$50,000.

It was resolved that the whole fund should be invested in United States securities as early as practicable.

THE LAST WILL AND TESTAMENT OF NANCY CLARKE BACHE.

I hereby, in pursuance and exercise of the power of appointment contained in the last will and testament of my husband, Alexander Dallas Bache, devise, bequeath, and appoint the sum of five thousand dollars of the principal of the estate of my said husband, over which I have a power of appointment by his will, to be paid by his executors, or by such person or persons as shall hold the principal of the estate at my death, to my nephew, Henry Wood Bache, absolutely; and I hereby request my nephew, in case he should die unmarried and without issue, to make such a disposition of this amount by will as will secure it to be paid at his death to the National Academy of Sciences, at Washington, to be held by that corporation upon the same trusts and for the same purposes as are declared by my husband in his will, as to the residue of his estate after my death. I expressly desire, however, that it shall be understood that this request shall not be construed into any direction which would interfere with his full control of the principal, which is to be paid into his hands directly.

Second. I hereby direct the house, No. 1624 Chestnut street, in which I now reside, to be sold by my executor hereinafter named, within a reasonable time after my death, either at public or private sale, and after deducting from the purchase money any debts or expenses connected with the sale, and the administration of my estate, which, with the cash on hand or other property which I may own or possess at my death, shall be sufficient to satisfy, I direct my executor to pay over the net proceeds to the National Academy of Sciences, at Washington, to be held by that corporation as trustees in trust to apply the income thereof to the prosecution of researches in physical and natural science, according to the directions contained in the last will and testament of my husband as to the residue of his estate after my death in the same manner as if all the directions contained in the last will and testament of my husband and in the codicil thereto were herein repeated at length; my object being to make precisely the same disposition of the proceeds of this house as was made by my husband of his residuary estate after my death.

Third. I direct all the medals and diplomas of my husband, and the large photograph of him now in my possession, to be deposited and remain with the National Academy of Sciences. I have made a memorandum of the disposition of certain other articles which I desire shall be carried into effect as if contained in this will. I appoint Morton P. Henry, of Philadelphia, executor of this my last will and testament.

CODICIL TO THE LAST WILL AND TESTAMENT OF NANCY CLARKE BACHE, DATED APRIL 19, 1869.

Item: I hereby direct my executor to pay out of the proceeds of the sale of my said house, No. 1624 Chestnut street, Philadelphia, which I have directed to be sold, the sum of five hundred dollars to my nephew, Henry Wood Bache, for his own use and

benefit. I further direct my executor to invest five thousand dollars of the proceeds of sale of said house in his own name, as trustee, in such securities as he may think proper, and to pay the income thereof to my nephew, Henry Wood Bache, during his natural life. After the death of my nephew, I direct that the principal of the said sum of five thousand dollars shall go to the National Academy of Sciences, at Washington, in trust for the same uses and purposes as are declared as to the proceeds of sale of said house by my said will. I expressly declare that the above bequests to Henry Wood Bache are in addition to the five thousand dollars I have appointed to him out of my husband's estate. *Item*: I give and bequeath to my faithful servant, Isabella Mallihan, the sum of one hundred dollars, to be paid to her out of the proceeds of sale of said house. *Item*: I give and bequeath to my sister-in-law, Mrs. Sophia A. Irwin, the sum of one thousand dollars, to be paid to her out of the proceeds of sale of my said house. *Item*: I desire my executor to permit my sister, Mrs. Littlefield, to occupy my house for six months after my death free of rent, if she should desire to do so, during which time it shall remain unsold. *Item*: I hereby declare that the balance of the proceeds of the sale of my said house shall go, after paying and providing for the above legacies, as is set forth and declared in my said will, which in all other respects I hereby republish and declare as my last will and testament.

Sworn and subscribed before John Campbell, deputy register, in the city and county of Philadelphia, January 20, 1870.

STATEMENTS REGARDING THE BACHE FUND.

In April, 1871, the treasurer, Mr. Fairman Rogers, announced that the proceeds of the estate left to the Academy by the late Prof. A. D. Bache, had been formally handed over to him by the executors; that these funds amounted to \$40,515.07, together with an annual ground rent of \$102, and some land in Missouri not now available; and that in conformity with the resolutions adopted by the Academy, he was converting the securities into United States bonds as soon as practicable, and had given bonds in the sum of \$50,000.

In April, 1872, the treasurer made a financial report concerning the Bache trust fund, and stated that the annual income amounted at present to about \$2,500 in gold. He presented his bond to the Academy, which was approved and placed in the custody of the president.

The president informed the Academy that the board of direction had made two appropriations; one for the promotion of a magnetic survey of the United States, under the direction of Mr. Hilgard, and one for investigations of sun spots, by Professor Winlock.

In April, 1876, Mr. Henry, on the part of the board of direction, gave a statement of appropriations made for the past year.

The treasurer submitted a report of the condition of the fund, showing that the available income balance was \$2,426.97. Upon his suggestion, a resolution was adopted by the Academy, authorizing the sale of the ground-rent forming part of the assets.

In April, 1877, on motion it was—

Resolved, That all apparatus procured at the charge of the Bache fund for the use of investigators shall be duly receipted for by those to whom it is loaned, according to forms to be prescribed by the board of direction, and shall be returned to the

officer having charge of the property of the Academy whenever the investigation for which it was provided is completed, but that it shall at all times be held subject to the disposal of the Academy.

At a meeting of the Academy held in April, 1879, it was reported by the treasurer that, by the death of Henry Wood Bache, the Bache fund would be increased by the amount of \$4,650, according to the terms of the will of Mrs. A. D. Bache.

It was therefore—

Resolved, That Fairman Rogers, treasurer, be authorized to receive from the trustees of Henry Wood Bache, under the will of Mrs. A. D. Bache, all cash and securities payable to the National Academy of Sciences in the settlement of his accounts as trustee, and that he be further authorized to execute all papers required in the transaction.

At the stated session, in April, 1884, Mr. Hilgard, on the part of the board of direction of the Bache fund, made a statement of the present condition of the fund, explaining the policy which had formerly guided the board, and the rules adopted by the present board, with the view to having the fund more directly applied to distinct objects, the results of which might be published as “Memoirs of the Bache Fund.”

REPORT ON THE BACHE FUND.

At the session of the National Academy held at Washington in April, 1888, resolutions were passed calling upon the board of direction of the Bache fund to present a detailed report of their expenditures from the fund up to the present time. A wish was at the same time expressed that references should be given to memoirs and papers containing results obtained through the application of the fund.

The present report is intended to comply as far as possible with the request of the Academy. It is drawn, for the greater part, at least, from memoranda furnished by Prof. J. H. C. Coffin, from 1881 to 1887, treasurer of the Academy.

So far as can now be determined, it has from the beginning been the custom of the board of direction, in case of approval of any application for money from the Bache fund, to indorse their approval upon the application, and then to forward the application to the treasurer for payment.

When the present board came into office, formal rules were adopted requiring the production of proper vouchers for expenditures, and also making it necessary that the board of direction should be unanimous. For many years past, Prof. J. E. Hilgard, as the only member of the board residing in Washington, has been chairman of the board, and has conducted business directly with the treasurer. Applications for money have, it is believed, been most frequently made to him, but sometimes to the other two members of the board. The difficulty in making out an absolutely perfect list of all the appropriations made by the board arises from the fact, that the orders prior to April 19, 1884, were stolen

from the treasurer's box (together with all other vouchers) in the Academy room in the Smithsonian Institution. It is believed, however, that the list herewith furnished up to April, 1888, is nearly, if not quite complete. The list is as follows:

1871. Sept. 6, to Prof. J. E. Hilgard for the magnetic survey of the United States	\$500.00
1872. Jan. 16, to Prof. J. E. Hilgard for the same	500.00
1872. Jan. 16, to Prof. Joseph Winlock for investigations of sun spots	400.00
1872. Apr. 29, to Prof. J. E. Hilgard for the magnetic survey of the United States	500.00
1872. July 20, to Prof. Joseph Winlock for investigations of sun spots	400.00
1872. Nov. 28, to Prof. J. E. Hilgard for magnetic survey of the United States	1,000.00
1873. Feb. 17, to Prof. Joseph Winlock for investigations in solar physics ..	1,200.00
1873. Nov. —, to Prof. J. E. Hilgard for magnetic survey	1,200.00
1874. Mar. 16, to Prof. Joseph Winlock for the same as No. 3	500.00
1874. June 15, to Prof. J. E. Hilgard for magnetic survey	1,200.00
1875. June 17, to Prof. J. E. Hilgard for magnetic survey	1,000.00
1875. Oct. 5, to Prof. J. E. Hilgard for magnetic survey	500.00

The magnetic survey of the United States made at the charge of the Bache fund was terminated in 1876. The results obtained up to that time were published in detail in the Coast Survey Report for 1882, Appendix 14, 106 pp., 4to.

The money received by Professor Winlock was employed under his direction in observations of the sun, as described in the preface to vol. VIII of the Annals of the Observations of Harvard University, and the results were published in the second part of the same volume.

1875. Oct. 25, to Charles S. Peirce	400.00
(Two grants, one of \$1,200 for the study of color; one of \$500 for the comparison of sensations.)	
1876. Apr. 28, to Prof. A. M. Mayer for acoustic researches	250.00
Professor Mayer's results are contained in the Memoirs of the National Academy of Sciences, vol. III, Part I, 1884.	
1876. May 24, to Prof. J. E. Hilgard for the magnetic survey of the United States	1,000.00
1876. Sept. 18, to Charles S. Peirce	400.00
1876. Nov. 18, to Prof. S. P. Langley	500.00
1876. Dec. 12, to Charles S. Peirce	400.00
1877. May 16, to Prof. Wolcott Gibbs for researches on the complex inorganic acids	100.00
1877. June 13, to Prof. A. M. Mayer for researches on the nature of the discharge of the inductorium	500.00
Memoirs Nat. Acad., vol. III, Part 1 (1884).	
1877. Oct. 5, to Prof. J. E. Hilgard for the magnetic survey of the United States. Computations of field work from 1871 to 1876	600.00
1877. October 22, to Prof. Wolcott Gibbs for researches on the complex inorganic acids	200.00
1877. Nov. 19, to Prof. S. P. Langley	500.00
1878. Sept. 30, to Charles S. Peirce	500.00

1878. Sept. 30, to C. R. Powalky, PH. D. \$500.00
 For a new reduction of La Caille's observations of fundamental stars in the southern heavens in 1749-1757. Published in the report of the Coast and Geodetic Survey for 1882, Appendix No. 21, 1879.
 June 17, to R. W. Willson, treasurer Fort Worth eclipse party, to pay part of the expense of publishing the observations made by the party at Fort Worth, in July, 1878.
 Published: "Report of the observations of the total solar eclipse, July 29, 1878, made at Fort Worth, Texas."
1879. Jan. 17, to Leonard Waldo for work on eclipse party 100.00
 Report published by John Wilson & Son, Cambridge, and distributed to leading observatories and societies.
1879. May 10, to Samuel Hein (object not stated)..... 150.00
1879. May 20, to Prof. Wolcott Gibbs for work on complex inorganic acids. 300.00
1879. Aug. 2, to J. C. Watson (object not known)..... 1,000.00
1880. Feb. 17, to the American Journal of Science for magnetic maps 60.00
1880. Mar. 13, to Prof. C. S. Lyman, for the board of managers of the Yale observatory to aid the thermometric bureau of the observatory in purchasing standard thermometers and other instruments for its necessary equipment 500.00
 Reports published: "Report of the Board of Managers of the Observatory of Yale University to the President and Fellows," 1880-'81 to 1887-'88.
1881. June 6, to Prof. S. P. Langley for observations on the physical constitution of the sun..... 1,000.00
1881. Dec. 9, to Prof. Wolcott Gibbs for work on complex inorganic acids.... 300.00
 Dr. Gibbs's work on the complex inorganic acids is not yet completed. Five installments have been published in the Proceedings of the American Academy of Arts and Sciences, vols. XV, XVI, XVII, XVIII, XIX.
1882. July 14, to Prof. S. Newcomb for experiments on the velocity of light. 1,200.00
 The results of this investigation were published in the astronomical papers of the American Ephemerides, vol. II, parts III and IV.
1883. Apr. 25, to Mr. Rockwell for the eclipse party 800.00
1883. June 6, to Mr. Rockwell for the eclipse party 600.00
1883. Nov. 27, to Prof. E. S. Holden for observations of the aurora borealis and zodiacal light..... 300.00
1883. Nov. 27, to Prof. E. S. Holden for the purchase of an aurora spectro-scope, \$300 (less \$20.26 returned), \$279.74. This instrument is now at the Washburn Observatory, Madison, Wis. In consequence of the removal of Professor Holden to California a short time after it was received, no work suitable for publication was done with it. Professor Holden refunded \$20.26.
1884. Sept. 17, to Prof. S. P. Langley for observations on the physical constitution of the sun..... 1,500.00
 Professor Langley's work has been done partly at the expense of the Bache fund, and partly at the expense of other funds, and his results have been published together so that a precise reference to what has been done with the Bache fund alone is not possible. We may, however, cite the following: American Journal of Science, August, 1887; Memoirs of the National Academy of Sciences for 1882, vol.—; American Journal of Science for March, 1884; the same for January, 1886; the same for August, 1886.

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1884. Oct. 22, to Prof. Ira Remsen for observations on the influence of magnetism upon chemical action	\$500.00
Two preliminary papers have been published in the American Chemical Journal, vol. VII, p. 430. A paper giving the complete results will soon be published in the American Chemical Journal.	
1884. Nov. 6, to Prof. H. B. Hill for the study of pyromucic acid	200.00
The results of this work have been published in Leibig's Annalen, vol. CCXXXII, p. 42; in the Berichte der Deutschen Chem. Gesellschaft, XVIII, 2095; XX, 252; XX, 3359; and in the Proceedings of the American Academy of Arts and Sciences, XXI, 135; XXII, 315; XXIII, 188. Other papers are in press or nearly ready for publication.	
1884. Nov. 20, to Prof. E. S. Holden for observations on 303 fundamental stars	400.00
1884. Dec. 4, to Dr. E. H. Hall for investigations in electricity	500.00
Results published in the August and October numbers of the American Journal of Science for 1888.	
1884. Dec. 26, to W. M. Davis for observations on the motion of clouds as indicating upper currents	50.00
No published report has been made.	
1885. March 26, to W. M. Davis for observations on thunder storms	200.00
1885. April 6, to Prof. E. S. Holden for observations on 303 fundamental stars	225.00
Professor Holden's work on the observations of fundamental stars appeared in the publications of the Washburn Observatory, vol. IV, 1885.	
1885. May 1, to Prof. A. A. Michelson for work on the velocity of light....	283.97
1885. June 11, to Prof. E. C. Pickering for observations on stellar photography	1,000.00
Professor Pickering's results have been published in the Memoirs of the American Academy of Arts and Sciences, XI, 179; XVIII, No. 4, of the Annals of Harvard College Observatory; in vol. XVIII, No. 6, of the same; and vol. XVIII, No. 8.	
1885. July 2, to Prof. J. E. Hilgard for the magnetic survey of the United States. Supplementary work	50.00
1885. July 8, to Prof. J. E. Hilgard for same	150.00
1885. July 8, to Yale College Observatory for determination by A. Hall, jr., of the mass of Saturn	300.00
1885. Nov. 9, to Mr. A. G. Webster for an investigation of the mechanical equivalent of heat by an electric method	250.00
Nothing was accomplished by this work. The apparatus was forwarded to the treasurer at Washington, and \$29.11 of the money refunded.	
1885. Dec. 31, to Prof. E. C. Pickering for observations on stellar photography	1,000.00
1886. Feb. 27, to Yale College Observatory for determination by A. Hall, jr., of the mass of Saturn	300.00
1886. March 3, to the New England Meteorological Society for observations on thunder storms	300.00
1886. July 28, to Yale College Observatory for determination by A. Hall, jr., of the mass of Saturn	300.00
Mr. Hall, under Dr. Elkin's direction, made observations in 1885-1887, and has since that time been engaged in reducing the same. The details are not ready for publication, but the results of his work were communicated to the Academy at its meeting in April, 1889.	
1886. Sept. 29, to Dr. B. A. Gould for measurements of the Cordova photographs	500.00

1886. Oct. 7, to Prof. E. C. Pickering for work on stellar photography	\$1,000.00
1887. Jan. 30, to Dr. B. A. Gould for measurements of the Cordova photographs	500.00
1887. Mar. 22, to Prof. A. A. Michelson for researches on light.....	500.00
The results of this work have been published in the American Journal of Science and Arts for May, 1886.	
1887. Mar. 24, to Prof. H. A. Rowland for continuation of work on solar spectrum	1,000.00
Professor Rowland's results have not been published in full. They are partly contained in the American Journal of Science for March, 1887, and are embodied in Professor Rowland's magnificent photographic map of the solar spectrum, second series, 1888. Nine plates, 12 by 36 inches.	
1887. June 2, to Prof. S. Newcomb for the Eclipse Expedition to Japan	2,000.00
The full report of the expedition, by Prof. D. P. Todd, was presented to the Academy, April 19, 1889.	
1887. July 26, to Prof. A. A. Michelson for researches on light.....	500.00
1887. Nov. 15, to Prof. Wolcott Gibbs for a systematic study of the action of chemical compounds upon the animal system.....	1,000.00
1888. Apr. 25, to Prof. T. C. Mendenhall, to carry on seismological researches.	100.00
1888. June 10, to Prof. E. D. Cope for the purpose of conducting researches on the extinct vertebrata of North America; for the payment of the salary of one expert préparateur of the fossils in extracting them from the rock, cementing fragments, etc.....	600.00
1888. Sept. 15, to Prof. E. D. Cope (appropriation No. 2) for the payment of expenses involved in work on vertebrate palæontology.....	600.00
1888. Nov. 2, to Prof. D. P. Todd, to defray the expenses of printing and distributing instructions with reference to observations to be made by volunteers on the total eclipse of January 1, 1889	125.00
The results are embodied in part in a paper <i>On composite coronagraphy</i> , read before the Academy, April 17, 1889.	
1888. Dec. 7, to Prof. Wolcott Gibbs (second appropriation) for a systematic study of the action of chemical compounds upon the animal system.	1,000.00

As already stated, it is believed that this report is complete, as the treasurer's books were not stolen together with the applications and vouchers. As it is very desirable, however, that the report should be made as complete as possible, the undersigned would suggest that it should be printed before final acceptance by the Academy, and that printed copies should be distributed among members who have received appropriations from the fund, with the view of obtaining any correction necessary.

Respectfully submitted.

JAMES D. DANA.
WOLCOTT GIBBS.
J. E. HILGARD.

THE JOSEPH HENRY FUND.

At the April meeting, 1878, the treasurer of the Academy made a statement respecting the "Joseph Henry Fund" of \$40,000, contributed by Fairman Rogers, Joseph Patterson, George W. Childs, A. J. Drexel, F. A. Drexel, Charles H. Rogers, J. G. Fell, Isaac Lea, Asa Packer, John Welsh, W. Blanchard, James Lennox, executors of the estate of John C. Green, Mrs. John C. Green, Robert L. Stuart, Miss

C. L. Wolfe, William Libbey, E. N. Dickerson, Cyrus W. Field, Thomas A. Scott, W. W. Corcoran, George P. Wetmore, Thomas H. Powers, J. S. Morgan, J. Pierrepont Morgan, I. V. Williamson, John W. Garrett, Charles S. Coxe, Cyrus H. McCormick, J. E. Caldwell, William Weightman, Alexander Brown, Henry C. Gibson, J. Donald Cameron, Samuel M. Felton, H. H. Houston, and Nat. Thayer, "as an expression of the donors' respect and esteem for Professor Henry's personal virtues, their sense of his life's great devotion to science, with its results of important discoveries, and of his constant labors to increase and diffuse knowledge and promote the welfare of mankind," which sum of \$40,000 they have caused to be invested in certain securities, and to be deposited with and held by the Pennsylvania Company for insurance of lives and granting annuities in trust, from time to time to collect the income thereon, and to pay over the same to Prof. Joseph Henry during his natural life, and after his death to his wife and daughters, and after the death of the last survivor "to deliver the said fund and the securities in which it shall then be invested to the National Academy of Sciences, to be thenceforward forever held in trust under the name and title of the 'Joseph Henry Fund,' the principal to be forever held intact, and the income to be from time to time applied by the said National Academy of Sciences, in its sole discretion, to assist meritorious investigators, especially in the direction of original research."

A resolution was adopted accepting said trust, and directing, authorizing, and empowering Fairman Rogers, treasurer of the Academy, in its name and upon its behalf, to affix its corporate seal to and to execute all such deeds, writings, and assurances in law as may be necessary to carry the said trust into effect.

On motion of Mr. W. B. Rogers it was unanimously—

Resolved, That the National Academy of Sciences hereby present their grateful acknowledgments to Messrs. Joseph Patterson, Fairman Rogers, George W. Childs, and the other subscribers to the "Joseph Henry Fund," for the generous contributions by which they have expressed their appreciation of the lifelong and disinterested scientific labors of the revered president of the Academy, and have provided an important future addition to its means of scientific usefulness.

THE WATSON TRUST FUND.

This trust fund was left to the Academy by one of its most distinguished members, Prof. James C. Watson, at his death in 1880. An extract from the will and the action of the Academy in reference to it are given below, and also the awards since made by the Academy from this fund.

EXTRACT FROM THE WILL OF JAMES C. WATSON.

The will of the late James C. Watson contains, with bequests to several members of his family, the following provisions:

Fifth. I give and devise, subject to conditions and legacies hereinbefore and hereafter mentioned, all the rest, residue, and remainder of my real and personal estate to the National Academy of Sciences of the United States of America, of which I am a member, which said Academy was incorporated by act of Congress approved March

3, A. D. 1863, to be aggregated, kept, and invested as a perpetual fund, the income of which shall be expended by said Academy for the promotion of astronomical science.

I direct that all the stocks, bonds, and securities owned by me (than those specifically bequeathed otherwise) be converted into money on the most advantageous terms possible, and as soon as it may be advantageous to do so, and paid over to the treasurer of said National Academy of Sciences. I direct that any other personal property belonging to me, as well as any real estate of which I may die possessed, except my books and scientific papers, be sold and disposed of as soon as may possibly be done advantageously to the interests of my estate, and that the proceeds thereof be paid over to the treasurer of said National Academy of Sciences.

I direct that my books and scientific papers be transferred to said National Academy of Sciences, to become part of the library of said Academy.

In order to carry out the wish hereinbefore expressed as to the disposal of the income from the fund resulting from my estate hereby devised to said National Academy of Sciences, I do hereby direct that the designation of the particular objects and work which may be aided by this fund shall be determined, subject to approval by a vote of the Academy, by a board of trustees, three in number, who shall be members of the Academy, and elected, after the first herein named, by said Academy whenever a vacancy may occur by death or otherwise. The trustees so appointed shall hold said office, unless voluntarily relinquished by them, during the period of their membership in said National Academy of Sciences; and I do hereby appoint and constitute Julius E. Hilgard, of the U. S. Coast Survey, and Simon Newcomb and J. H. C. Coffin, professors of mathematics, U. S. Navy, all of Washington, in the District of Columbia, to be the first board of trustees for the purposes herein named.

It is my wish that the Academy may, if it shall deem proper, provide for a gold medal of the value of \$100, to be awarded, with a further gratuity of \$100, from time to time, to the person in any country who shall make any astronomical discovery or produce any astronomical work worthy of reward and contributing to our science.

It is my further wish that provision be made for preparing and publishing tables of motion of small planets which have been discovered by me as soon as it may be practicable to do so, and I devise that in all cases the trustees and Academy shall act in harmony to obtain results of the greatest possible aid to our science from the income fund resulting from my estate. I desire that results so obtained shall be published as speedily as possible, in such manner as may be provided by the Academy.

I direct that the said National Academy of Sciences take all necessary and proper measures to invest the fund resulting from the property hereby devised where they may be safe and yield the greatest possible income consistent with safety.

This will is dated July 11, 1874.

STATEMENT IN REGARD TO THE BEQUEST OF THE LATE PROFESSOR WATSON,
BY MR. NEWCOMB, CHAIRMAN OF THE TRUSTEES.

April, 1881.

It is known to members of the Academy that our late lamented colleague, Prof. James C. Watson, has bequeathed all his estate, after satisfying certain claims and paying certain annuities to relatives, to the National Academy of Sciences, in trust for the promotion of astronomical researches. Having been named one of the executors, I took occasion during a journey to Madison last January to inform myself of the condition of the estate, and the probable benefits to be derived from it. I find that, although almost the entire property was in the State of Michigan, yet, as he was a resident of Wisconsin at the time of his death, and as his estate was entirely personal, the courts of the latter had exclusive jurisdiction of the bequest.

As none of the executors named in the will are residents in Wisconsin, and as they are widely scattered, it will be difficult for more than one to act, and the administration will have to be conducted under the direction of the probate court at Madison.

It is difficult to see what amount, if any, the Academy will ultimately receive for the purposes desired by the testator, owing to two causes, the unsettled condition of several business enterprises in which our colleague had invested much of his means, and the indefinite character of his business arrangements with the University of Wisconsin. The only item of the estate to which even approximate cash value *can* be assigned consists of stock and policy in the Mutual Life Insurance Company of Michigan, the total value of which probably amounts to about \$30,000.

The next item in importance is the Printing and Publishing Company of Ann Arbor, of which the deceased owned 499 shares out of the total of 500. The actual cost of this stock was about \$26,000, but the property at present owned by the company is of so miscellaneous a character and it is so complicated by litigation as to make it hardly possible even to guess at the value of its assets.

I judge, however, from a general examination of its property, that should the company go into liquidation it might realize anywhere from \$5,000 to \$15,000, but a debt of \$5,000 is due from it, so that the net amount may range from zero to \$10,000, the lower ultimate being more probable than the upper one.

The next item in importance is the Chase Publishing Company of Toledo, which is said to be profitable, but to it no definite value can be assigned.

On the other hand, our colleague at Madison expended considerable sums on improvements of the observatory and its grounds, without any distinct understanding with the board of regents as to who should ultimately bear the expense. These improvements include the Watson solar observatory, the students' observatory, the fitting up of the director's house, the purchase of the transit instrument, and several other items. An amount of between \$5,000 and \$10,000 is, I believe, due on these various improvements, so that if the estate is to pay for them all it will be materially diminished.

I may also add that, under the laws of Wisconsin, Mrs. Watson is entitled in lieu of the provision made for her in the will to accept one-third of the net proceeds of the estate. It has been suggested that in the event of the estate not realizing the amount expected an arrangement should be made with Mrs. Watson to allow her the entire income from it during her life on condition of the entire amount reverting to the Academy on her death. This arrangement will probably commend itself if the amount shall be found insufficient to carry out the objects which our lamented colleague had at heart in making the bequest.

The matter of the action of the Academy on the Watson bequest was referred to the council.

STATEMENTS RELATING TO THE WATSON FUND.

The final account of Leopold Gruner, the only executor named in the will, was rendered to the county court of ——— County, in the State of Wisconsin, May 31, 1882.

Mrs. Annette H. Watson claimed, and was allowed under the laws of Wisconsin, one-third of the estate of her late husband in lieu of the bequests made her.

The decree of the court, made July 5, 1882, adjudges that the said executor retain in his hands the sum of \$3,000 for the purpose of paying the annuity bequeathed by the said James C. Watson, deceased, to his mother, Rebecca E. Watson.

That all the rest, residue, and remainder of said personal estate, consisting of the sum of \$5,057.25 in cash, 174 shares of said stock of the Michigan Mutual Life Insurance Company, and the undivided two-thirds of said miscellaneous books, and all

and singular the said books and scientific papers as delivered by said executor to it, be, and the same are hereby, assigned and set over to the said National Academy of Sciences, its successors and assignees.

Under this decree, the Academy received from the executor \$7,057.25 in cash and 134 shares of stock of the Michigan Mutual Life Insurance Company, of the par value of \$6,700, the reduction of 40 shares of the Michigan Mutual Life Insurance Company and the increase of \$2,000 having been made at the request of Mrs. Watson.

At the April meeting, 1883, the treasurer of the Academy, Mr. Coffin, presented the following resolutions in regard to the bequests of the late James C. Watson, which were adopted:

Resolved, That the National Academy of Sciences accepts the bequests of the late James C. Watson for the trust and purpose expressed in his will.

Resolved, That the Academy approves of the appropriation made by the board of trustees of \$500, or as much of the same as may be necessary, to aid in the observation of the total solar eclipse on May 6, 1883.

In April, 1884, the following recommendations of the trustees of the Watson fund, upon the advice of the council, were adopted by the Academy (these recommendations are based on the present cash balance of \$1,292.75, and the annual income of present investments, \$748):

(1) That the invested fund be increased by the addition of \$850.25, so that its par value may equal, as near as may be, \$13,750.25, the sum received from Professor Watson's estate.

(2) That dies, with suitable designs, be prepared for a medal to be awarded from time to time to the person in any country who shall make any astronomical discovery or produce any astronomical work worthy of special reward and contributing to the progress of astronomy, in compliance with the expressed wishes of Professor Watson.

(3) That there be set aside annually the sum of \$500, or as much thereof as may be necessary and available, to commence work on tables of the small planets discovered by Professor Watson, as also expressly desired by him in his bequest to the Academy, such work to be under the direction of Mr. Newcomb.

At the stated meeting of the Academy, held in Washington, in April, 1885, Mr. Coffin, on the part of the board of trustees of the Watson fund, reported that, since the session of the Academy in April, 1884, in accordance with resolutions then passed, the invested fund had been increased to \$13,750, the sum received from the bequest of Professor Watson, and progress had been made in procuring a model of the proposed Watson medal, and the work on the small planets, under the direction of Mr. Newcomb, had been commenced, but no money had yet been drawn from the treasury for that purpose.

At the April session, 1886, Mr. Newcomb, at the request of the board of trustees of the Watson fund, presented the following resolution, which was adopted by the Academy:

Resolved, That the Watson medal and the further sum of \$100 in gold be awarded to Dr. Benjamin Apthorp Gould, for his valuable labors for nearly 40 years in promoting the progress in astronomical science, and especially for his successful establishment of the National Observatory of the Argentine Republic, as manifested in the six volumes of observations recently prepared and published by him.

By vote of the Academy, the trustees of the Watson fund were authorized to take the proper steps for having the medal struck.

Mr. Newcomb reported that, while appropriations of money had been made for carrying out that part of Professor Watson's will which provided for the making of tables of the asteroids, work had been only partially commenced, owing to the difficulty of finding a sufficiently skilled computer to make such computations. They had been obliged to send abroad to find a person to make the computations necessary to enable an unskilled computer to continue the work on the other planets.

During the Washington meeting of the Academy, April, 1887, the president stated that Mr. Hilgard had resigned his position on the board of trustees of the Watson fund, and that Mr. B. A. Gould had been appointed to fill the vacancy.

PRESENTATION OF THE FIRST WATSON MEDAL.

At a public session of the Academy, held on the evening of April 20, 1887, the first James Watson medal and the sum of \$100 in gold were presented to Dr. B. A. Gould for his valuable labors for nearly 40 years in promoting the progress of astronomical science.

The president of the Academy, Professor Marsh, in his address in making this presentation, gave an account of the great work accomplished by Dr. Gould. The following extracts from this address will place on record here the main reasons for the first award of the Watson medal:

EXTRACTS FROM THE PRESIDENT'S ADDRESS.

The name of Benjamin Apthorp Gould, whom we are thus to honor to-night, is so familiar by his recent works, that we are in danger of forgetting his services as the pioneer in introducing the methods, culture, and ideas of German astronomy into this country. The years 1840 to 1843 might almost be considered as those of the birth of American astronomy. Then were founded the Washington and Cambridge Observatories, which brought forth such men as Walker, Hubbard, and Bond. Dr. Gould was then a student at Harvard, imbibing from Professor Pierce that enthusiasm for scientific work which that teacher so well knew how to inspire. Soon after graduation, Mr. Gould sailed for Europe to pursue under Bessel, Gauss, and others, the study of his favorite science in its most advanced phases. Winning the degree of PH. D. at Göttingen, he returned home full of student's honors, and started the *Astronomical Journal*. Later, he was appointed by Bache as head of the longitude department of the Coast Survey, in which position it

was a part of his duty to perfect and apply the method of determining longitudes by telegraph.

The Astronomical Journal was largely a labor of love, as the income could not possibly balance the outlay. Discontinued in 1861 on account of the advent of the civil war, it has recently been reëstablished after a silence of just 25 years. In 1868, Dr. Gould resigned his position on the Coast Survey, and shortly afterward accepted an invitation from the Argentine Government to found a national observatory in that country.

Sailing for his new post of duty in 1870, he expatriated himself for a period of 15 years. It is more especially for his work during this period that the distinction which we celebrate to-night was conferred upon him.

The northern hemisphere being the seat of civilization and the home of the astronomers of the world, the natural result was that the phenomena of the southern heavens were much less studied than those of the northern. Ardent astronomers were from time to time attracted thither to reap the harvest which nature had sown, as Lacaille in 1750, and Herschel in 1830, but such men could simply do little in a field so great. Permanent observatories were from time to time established. First, that at the Cape of Good Hope, by the British Government; then, that of the Chilian National Observatory, at Santiago, by our late honored associate, James M. Gilliss; and yet more recently, the Melbourne Observatory, by the government of South Australia. But these institutions were not prepared to make that complete survey of the southern heavens which our associate had planned.

Dr. Gould's great works are :

(1) The *Uranometria Argentina*, one volume, with large atlas. This work comprises a catalogue and map of all the stars down to the seventh magnitude, from the south pole to 10 degrees north declination, the position and magnitude of each being given. It is not a mere catalogue, but embodies an exhaustive study of the distribution of stars of different magnitudes and their relations to the Milky Way.

(2) The *Argentine General Catalogue*, one volume, 4to, contains the places of nearly 33,000 (32,448) stars, determined with the highest accuracy with the meridian circle. Three determinations of each star were generally made. The catalogue is followed by a list of the stars contained in some of the most noted clusters.

(3) The *Cordoba Zone Catalogues*, seven volumes, give the places of 73,160 stars down to the tenth magnitude.

The mere statement of these numbers affords no conception of the labor involved in these works. We may fairly compare the general catalogue with the zone observations projected by the International Astronomical Society more than twenty years ago. As far back as 1863, the work of determining the position of all the stars north of the equator down to the ninth magnitude was divided up among such observatories of Europe and America as were prepared to participate in it.

Their work is still incomplete, while that of our associate, commenced long afterwards, lies finished before us.

Many variable stars were discovered during these investigations, and two whose proper motion is about 6'' annually are equaled by only one other, so far as is known.

Eleven hundred photographs of southern star clusters taken during the years 1872-1883 have been preserved, and are now undergoing measurement.

Five volumes of meteorological observations have been published from stations established in all parts of the Argentine territory, giving the climate relations of the southern half of the continent, and establishing the isothermal lines.

The observatory and a national meteorological office were left in full organization and activity.

This vast and comprehensive work is embraced in 13 quarto volumes already published, and 6 are now prepared for publication, making 19 in all.

PRESENTATION OF SECOND WATSON MEDAL.

In 1888, at the April meeting of the Academy, the board of trustees of the Watson fund recommended that the second Watson medal be given to Prof. Edward Schönfeld, director of the University of Bonn, Germany, for his services in cataloguing and mapping the stars visible in our latitudes, and especially for his recently published southern *Durchmusterung*. This recommendation was approved by the Academy.

The following report was presented to the Academy by the board of trustees, giving the reasons for the award of the Watson medal to Professor Schönfeld:

REPORT OF THE TRUSTEES UPON THE AWARD OF THE WATSON MEDAL.

To the National Academy of Sciences:

The Board of Trustees of the Watson fund recommend that the Watson medal, with \$100 in gold, according to the provisions of the trust, be awarded by the Academy to Prof. Edward Schönfeld, Director of the University Observatory at Bonn, for his services in cataloguing and mapping the stars visible in our latitudes, and especially for his recently published southern *Durchmusterung*.

The plan of forming a catalogue of all the stars brighter than the tenth magnitude, from the north pole to the equator, was conceived many years since by our late honored associate, the illustrious Argelander. The actual work was begun in the spring of 1852, but was so severe that, after a year, Argelander was obliged to restrict his personal share in it to labors of revision and verification, leaving the actual telescopic survey to others, chief among whom were his assistants and

pupils, Dr. Schönfeld, now his successor in the Observatory, and Dr. Krüger, now Director of the Observatory at Kiel.

This magnificent undertaking was thoroughly accomplished, and the results, under the title of *Durchmusterung des nördlichen Himmels*, were published in three quarto volumes, the last of which appeared in 1862. This classic work has been since then, and must long remain, one of the most indispensable books of reference for the practical astronomer. It derives, if possible, an additional importance from serving as the basis for the vast undertaking of accurately determining the positions of all stars north of the equator to the ninth magnitude inclusive. This has been going forward for about twenty years, by the coöperation of a number of the principal observatories of the world, under the guidance of the *Astronomische Gesellschaft*, an international organization, in the establishment and conduct of which, Professor Schönfeld has taken a conspicuous part.

Meanwhile, his researches concerning the variable stars, both his many discoveries, and his thorough study of the laws which govern their variation, have not merely placed Professor Schönfeld in the foremost rank of the investigators in this department of astronomy, but, in the universal opinion of astronomers, at the head of all busy laborers in this field. To him, questions of doubtful nomenclature or notation have been submitted by astronomers of whatever nationality, and his verdict always commands universal acceptance. In this, as in the other fields of stellar astronomy already mentioned, the mantle of his great predecessor, Argelander, has fallen upon worthy shoulders, and the Observatory of Bonn has maintained its peculiar and unsurpassed eminence.

But the greatest achievement of Professor Schönfeld, and that which has especially prompted the trustees of the Watson fund in their recommendation of this award, is his last published work, the extension of the *Durchmusterung* from the equator to the southern tropic. Not only has he accomplished this in full conformity with the previous survey of the northern sky, in which he took so important a part, but he has emulated the example of his predecessor and teacher by the improvement of previous methods. The experience which he has attained in the northern *Durchmusterung* enabled him to extend the limit of brightness up to which his catalogue is exhaustive, and the 23 degrees of southern declination which it includes have been explored and surveyed by himself alone; he having made all the observations personally, and having personally computed them, and personally edited and superintended their publication. This southern extension of the census of the sky contains — stars, the positions of all of which have been reduced to the epoch of Argelander's *Durchmusterung*, and which are all likewise represented upon charts constructed with all attainable accuracy.

So brilliant and priceless a contribution to our stellar knowledge would demand recognition, even had it not been preceded by the other important and conspicuous labors to which we have referred.

The board of trustees has consequently felt no hesitation in its unanimous recommendation to the Academy.

SIMON NEWCOMB.

J. H. C. COFFIN.

B. A. GOULD.

WASHINGTON, *April* 18, 1888.

At a public session of the Academy, held on the evening of April 17, 1889, the second James Watson gold medal and the sum of \$100 in gold were presented to Prof. Edward Schönfeld, Director of the Observatory of Bonn, Germany.

As Professor Schönfeld was not present at this meeting, the foreign secretary was instructed to forward the medal and \$100 in gold to him through the German embassy. This was done, and the medal and fund were duly received by Dr. Schönfeld, who has since acknowledged their receipt and expressed to the Academy his high appreciation of the honor thus conferred upon him.

THE HENRY DRAPER FUND.

At the April session in 1883, the president announced that Mrs. Henry Draper, widow of Dr. Henry Draper, late an honored member of the Academy, had presented to the National Academy of Sciences a fund of \$6,000 for the establishment of a gold medal to be awarded every two years to the individual in this or any country who makes the most important discovery in astronomical physics, the value of said medal to be \$200, and the fund, in case the medal should not be awarded, to be applied by the Academy to investigations in the same department of science.

The text of the deed of gift is as follows:

DEED OF TRUST OF MRS. HENRY DRAPER.

Know all men by these presents that I, Mary Anna Palmer Draper, of the city, county, and State of New York, in consideration of the premises, and of the acceptance of the within trust by the National Academy of Sciences, and also in consideration of divers other good and valuable considerations, I, the said Mary Anna Palmer Draper, hereto moving, have given, granted, assigned, transferred, and set over, and by these presents do give, grant, assign, transfer, and set over unto the said National Academy of Sciences, and to their successors forever, a certain fund or sum of \$6,000, with the interest and income thereof, to have and to hold the same in trust, nevertheless upon the special trusts, and for the uses and purposes following, to wit:

First. In trust to invest, and to reinvest, the said sum of \$6,000, and to keep the same invested in good and safe securities, or in such other manner as shall be, in their opinion, best for the preservation and maintenance of said fund.

Second. In trust to use the interest and income thereof for the purpose of striking a gold medal, which shall be called the "Henry Draper Medal," shall be of the value

of \$200, and shall be struck in a die to be selected and presented to said National Academy of Sciences, by me, the said Mary Anna Palmer Draper. And the said medal shall be awarded and presented from time to time by the said National Academy of Sciences to any person in the United States of America or elsewhere, who shall make an original investigation in astronomical physics, the results of which shall be made known to the public, such results being, in the opinion of the said National Academy of Sciences, of sufficient importance and benefit to science to merit such recognition; provided, however, that said medal shall not be presented or awarded more frequently than once in 2 years, and provided, also, that the investigation for which it is awarded, or the completed publication thereof, shall have been made since the time of the last preceding award and presentation of said medal.

Third. In trust that if discoveries of equal importance shall be made in astronomical physics at or about the same time in the United States of America, and also in some other part of the world, each of which discoveries might, in the opinion of the said Academy, entitle the discoverer to be considered as a competitor for said medal, preference shall be given in the awarding thereof to discoveries made by a citizen of the said United States of America.

Fourth. In trust that if the said die shall at any time be lost, destroyed, broken, or in any way rendered unfit for the purpose of striking the said medal, a new die shall be procured, exactly similar to the one selected and presented as aforesaid, and shall be paid for out of the interest and income of the said fund; and such sum or sums of money as shall at any time or times be necessary for the proper care, custody, and protection of the said die or of the said fund hereby given, shall also be taken from and out of the interest and income of the said fund, whenever the same shall be deemed necessary by the said National Academy of Sciences.

Fifth. In trust that if at any time or times the interest and income of the said trust fund of \$6,000 shall exceed the amount necessary for the striking of said medal and the care of the said die, and of the fund, such surplus over and above the sum or sums so required for the purposes of the trust as hereinbefore recited and set forth shall be used in such manner as shall be selected by said National Academy of Sciences, in aid of investigation and work in astronomical physics to be made and carried on by a citizen or citizens of the United States of America.

And the said National Academy of Sciences doth signify its acceptance of the said fund of \$6,000, and doth engage to hold and manage the same upon the trusts and for the uses and purposes herein mentioned and set forth.

In witness whereof I, the said Mary Anna Palmer Draper, have hereunto set my hand and seal, and the said National Academy of Sciences hath hereunto caused its corporate seal to be subscribed by its president, this thirteenth day of April, in the year one thousand eight hundred and eighty-three.

[SEAL.]

MARY ANNA PALMER DRAPER.

Sealed and delivered in the presence of—

EDWARD A. DIXON.

MORNAY WILLIAMS.

As to Mary Anna Palmer Draper.

O. C. MARSH,

President of the National Academy of Sciences.

Witnesses to the signature of O. C. Marsh—

J. H. C. COFFIN.

ASAPH HALL.

SAM'L H. WALKER.

Executed and acknowledged before Mornay Williams, notary public, New York County.

Acknowledgment of officer of the Academy before Samuel H. Walker, notary public, District of Columbia.

It was moved and adopted that the deed of Mrs. Henry Draper be entered at length in the minutes of the meeting.

The following resolution was recommended by the council and adopted:

Resolved, That a permanent committee of five be appointed to consider the subject of the bestowal of the Henry Draper medal, and to recommend to the Academy, from time to time, such persons as they may consider deserving of the medal, with the ground of their recommendation.

In accordance with this resolution the president appointed the following members as the committee on the Henry Draper medal:

G. F. Barker, <i>Chairman</i> ,	
W. Gibbs.	A. W. Wright.
S. Newcomb.	C. A. Young.

The following resolution relative to the fund presented by Mrs. Henry Draper was reported and adopted:

Resolved, That the National Academy of Sciences accepts the fund of six thousand dollars presented to it by Mrs. Mary Anna Palmer Draper, and engages to maintain the same upon the trusts for the uses and purposes mentioned and set forth in a certain deed executed by her on the 13th day of April, in the year of our Lord one thousand eight hundred and eighty-three, and signifies such acceptance by causing the corporate seal of the Academy to be affixed and the said deed to be signed by its president.

The president appointed the following committee to consider the form of a resolution of thanks to Mrs. Draper: Messrs. W. Gibbs and G. F. Barker.

In 1884, at the April meeting, it was resolved, on recommendation of the council, that the home secretary have engrossed and properly signed the resolution of thanks to Mrs. Draper drawn up at the stated session of the Academy in 1883, as follows:

Resolved, That the grateful acknowledgments of the National Academy of Sciences are due to Mrs. Draper for the confidence which she has shown in selecting the Academy as the trustee of a fund designed to reward scientific labor, and by so doing to commemorate the services of one who was loved for his virtues, and honored for his eminent success in the branch of science to which he devoted his noble and useful life.

PRESENTATION OF FIRST DRAPER MEDAL.

At the stated session of the Academy in 1885, the committee on the Henry Draper medal reported that it had had before it the claims of various investigators working in the field of astronomical physics, and had considered fully their claims to the distinction implied in the award of this medal by the Academy.

That, as a result of its investigations, the committee recommended to the Academy the award of the first Henry Draper medal to our fellow-member, Prof. S. P. Langley, for his researches and discoveries in relation to solar radiation. This recommendation was adopted.

The following is the report of the committee:

REPORT OF THE COMMITTEE.

To the National Academy of Sciences:

By a resolution of the Academy, adopted April 19, 1883, it is made the duty of the committee on the Henry Draper medal "to recommend to the Academy, from time to time, such persons as they may consider deserving of the medal, with the ground of their recommendation."

The original deed of trust provides that "the said medal shall be awarded from time to time by the said National Academy of Sciences to any person in the United States of America or elsewhere, who shall make an original investigation in astronomical physics, the results of which shall be made known to the public, such results being, in the opinion of the said National Academy of Sciences, of sufficient importance and benefit to science to merit such recognition."

In accordance with the above resolution of the Academy, and with the provisions of the deed of trust, the committee on the Henry Draper medal begs leave to report that it has taken into consideration the researches which have recently been made by the men of science of this and other countries in the department of astronomical physics, and that in consequence of such examination the committee unanimously recommends that the Academy award the Henry Draper gold medal to Prof. Samuel P. Langley, of Allegheny, Pennsylvania. The committee bases this recommendation upon the numerous investigations of a high order of merit which have been made by Professor Langley within the past few years in solar physics, and especially in the domain of radiant energy. In corroboration of its opinion, the committee desires to specify the following memoirs, in which the results of these investigations are, for the most part, embodied:

1. *On the Minute Structure of the Solar Photosphere.* (Am. J. Sci., III, vii, 87, February, 1874.)

This paper gives the result of two years' work, and announces the discovery (since confirmed by Janssen) that four-fifths of the sun's light comes from less than one-fifth of its surface. It was illustrated with a plate containing the most detailed representation of a sun spot, which had appeared up to that time.

2. *The External Aspects of the Sun.* (J. Frank. Inst., August and September, 1874.)

In this paper, the noted engraving of the "typical sun spot" appeared for the first time. It was executed for the purpose of giving material for passing judgment on the current theories of sun spots, and had undoubtedly a considerable influence in determining the present conviction of students of solar physics that the surface of the sun is essentially gaseous or cloudlike. This engraving has been reproduced by Secchi, Proctor, Young, and nearly every author who has written on the subject.

3. *On the Comparison of Certain Theories of Solar Structure with Observation.* (Am. J. Sci., III, ix, 192, March, 1875. Published simultaneously in *Memorie degli Spettroscopisti Italiani*, Vol. IV.)

A statement of the above consequences more in detail.

4. *Sur la température relative des diverses régions du soleil.* Première Partie. Les noyaux noirs des taches; Deuxième Partie. Région équatoriale et régions polaires. (Comptes Rendus, March 22 and 29, 1875.)
5. *Étude des radiations superficielles du soleil.* (Comptes Rendus, September 8, 1875.)

The author shows in these papers the existence of a remarkable thermochroic action in the solar atmosphere, such that the vibrations of great wave-length are less absorbed than the visible and ultra-violet. He proves also that no such difference between the polar and equatorial radiation as has been asserted by Secchi exists. Hence, it follows that the sun, if deprived of his atmosphere, would appear *blue*. This statement, however, was first made in explicit terms at the Detroit meeting of the American Association for the Advancement of Science.

See the paper entitled—

6. *The Solar Atmosphere.* (Am. J. Sci., III, x, 490, December, 1875. Suppl. No.)
7. *Measurement of the direct effect of Sun spots on Terrestrial Climates.* (Monthly Not. Royal Astr. Soc., November, 1876.)

Here the author essays a new method of determining whether sun spots affect terrestrial climates or not, although he does not undertake to say whether they may not be the indices of some other action which does affect them. Considering the spots merely as interruptions of a determinate quantity of the solar heat, he succeeds in demonstrating that their total effect (from this point of view) on terrestrial climates can not alter the mean temperature of the earth by so much as one degree Fahrenheit.

8. *On certain Remarkable Groups in the Lower Spectrum.* (Proc. Am. Acad., 1878.)

Contains the author's discovery of the duplicity of the rays in the "great A" group of the solar spectrum.

9. *On the Temperature of the Sun.* (Proc. Am. Acad., 1878.)

In this paper, the author publishes the results of his comparison of the heat and light of the sun with that of the molten steel in the Bessemer converter. At this time (so late as 1878) the temperature of the sun was maintained by physicists of high repute to be not over 1500°C . The author's object in this comparison was not to determine this temperature, but to furnish irrefragable proof that it was at any rate very much higher than that which physicists, misled by Dulong and Petit's law, had assigned to it. Incidentally, the conclusion was reached that this celebrated law itself is absolutely unreliable, a position which is now fully conceded.

10. *Observations on Mount Etna.* (Am. J. Sci. III, xx, 33, July, 1880.)

The author here gives the results of his studies made during the winter of 1878-'79, upon the upper slopes of Mount Etna, which were connected with the improvement of solar observation by the employment of a station at a high altitude.

11. *The Progress of Solar Physics.*

An address as president of the physical section of the American Association for the Advancement of Science, delivered at Saratoga in August, 1879. (Proc. Am. Assoc., xxviii, 51, 1879.)

12. *The Bolometer and Radiant Energy.* (Proc. Am. Acad., xvi, 1880.)13. *The Bolometer.* (Proc. Am. Metrol. Soc., December, 1880.)14. *The Actinic Balance.* (Am. J. Sci., III, xxi, 187, March, 1881.)

His solar studies having convinced him that two-thirds of the sun's radiant energy was unexplored for want of the proper apparatus, the author spent the year 1880 in experiments on the construction of an instrument for analyzing and measuring this and like forms of energy. This instrument which he called the bolometer, from *Bολη* and *μετρον*, is described in the papers above mentioned.

15. *Sur la distribution de l'énergie dans le spectre solaire normal.* (Comptes Rendus, March 21, 1881.)16. *Distribution de l'énergie dans le spectre normal.* (Comptes Rendus, July 18, 1881.)17. *La distribution de l'énergie dans le spectre normal.* (Ann. Chim. Phys., February, 1882.)

The first fruit of the use of this new instrument was the demonstration that the amount of heat which the earth receives from the sun (the solar constant) had been greatly underestimated, owing, among other causes, to inability previously to measure the solar heat in sufficiently small portions of the spectrum. The leading facts in regard to the distribution of energy in the normal spectrum, from the sun, and the distribution of this solar energy before absorption by the earth's atmosphere, are given in these papers.

18. *The Selective Absorption of Solar Energy.* (Am. J. Sci., III, xxv, 169, March, 1883. Also, Ann. Phys. Chem., XIX, 1883, and Ann. Chim. Phys., V, XXIX, 497, August, 1883.)

Treated more fully in "The Professional Papers of the Signal Service. No. xv. Researches on Solar Heat and its Absorption by the Earth's Atmosphere. Expedition to Mount Whitney, 1884."

The results already announced were so important in their bearing on the science of terrestrial meteorology that the author conducted, under the joint auspices of the Allegheny Observatory and the United States Signal Service, an expedition to the Sierra Nevadas of Southern California, the results of which were published extensively in American and foreign scientific journals. In the first article above mentioned is an account of the leading facts observed; which are that the sun's light is essentially *blue*, and that what we call "white" light is due to the absorption of these blue rays, first by the sun's atmosphere and then by our own. It had always been supposed that the sun's red and infra-red rays were powerfully absorbed by our own atmosphere, which acted, according to the familiar comparison of Poisson and Pouillet, like the glass cover of a hot-bed, which absorbs solar heat more and more as we approach the infra-red. This universally accepted belief was directly contradicted by these researches, and it was shown that the nature as well as the

amount of the absorption of the solar rays had been so wholly misunderstood that the general outlines of these important truths were here given for the first time. The value of the solar constant, which until now had been accepted, was radically altered, Pouillet's value, 1.7 calories, being raised to 3. In connection with this, a map was given of the infra red solar spectrum, containing numerous lines and bands hitherto unknown; and, what was wholly new, with their places fixed upon the normal or wave length scale by direct observation.

19. *Memoir on the Experimental Determination of Wave-lengths in the Invisible Prismatic Spectrum.* (Mem. Nat. Acad. Sci., 1884 (Read October, 1883). Also Am. J. Sci., III, xxvii, 169, March, 1884, and Ann. Phys. Chem., July, 1884.)

Almost, if not absolutely, all of our present knowledge of the constitution of bodies forming the external universe is dependent upon our information concerning the wave-lengths of the energy they send us, of which that coming in the form of light and which is visible is but the smaller portion. Inasmuch as until lately we have known almost nothing about any waves but visible ones, all our knowledge about terrestrial and other dark-heat radiation is in a condition of empiricism even to-day; a fact which is a great reproach to physical science. This arises chiefly from our want of knowledge in the past of any means of determining what these wave-lengths are, or, as a consequence of this, from our inability to analyze the invisible spectrum (in which two-third of the solar energy resides) in the way we can analyze the visible. The memoir above mentioned fixes the wave-lengths of solar heat, which had been known hitherto in the visible spectrum only, throughout its whole extent, and for the first time gives a trustworthy means of investigating that unknown major portion of the whole solar energy on which all organic life depends. This is the real purport of the somewhat abstruse, and, at first sight, unattractive investigations upon wave-lengths to which the author has devoted many years. He compares himself in this respect to one who is opening a path into hitherto unexplored country; not undertaking himself to study its natural history, but trying to execute the less attractive but indispensable labor of making the road on which future investigators may travel.

20. *On the Amount of the Atmospheric Absorption.* (Am. J. Sci., III, XXVIII, 163, September, 1884.)

In this paper, it is shown, both from theoretical considerations and by experiment, that the absorption of the solar rays by the earth's atmosphere is at least double what it has commonly been supposed to be.

21. *On the Temperature of the Surface of the Moon.* (Mem. Nat. Acad. Sci., III, September, 1884.)

In this memoir, it is stated that it has been found possible to form a heat spectrum from the moon, and to analyze its different parts. The conclusion reached (which differs from that of Lord Rosse) is that the temperature of the sunlit surface of the moon can not be greatly above zero centigrade. Results of interest in connection with solar radiation are also given.

Professor Langley has published numerous other papers upon subjects connected with solar or astral physics, but it is believed that those which have now been mentioned will fully justify the recommendation of the committee.

GEORGE F. BARKER,
Chairman.

WOLCOTT GIBBS.

SIMON NEWCOMB.

ARTHUR W. WRIGHT.

CHARLES A. YOUNG.

WASHINGTON, *April* 24, 1885.

At a public session of the Academy, held on the evening of April 21, 1886, the first Henry Draper medal awarded by the Academy was presented to Prof. S. P. Langley by the president, who in a short address gave a résumé of Professor Langley's work in astronomical physics, and the reasons why the Academy had honored him with this medal.

On recommendation of the council, the Academy adopted the following resolution in April, 1885:

Resolved, That the treasurer be authorized to reserve from the income of the Draper fund, \$65 each year, and such further sum as the committee on that fund may authorize, to be invested from time to time until the invested fund is increased to \$6,000, the sum intrusted to the Academy by Mrs. Draper.

PRESENTATION OF SECOND DRAPER MEDAL.

Mr. Barker, chairman of the committee on the Henry Draper medal, reported, in April, 1887, that the committee recommended that the second Henry Draper medal be awarded to Prof. Edward C. Pickering, director of the Harvard Observatory, for his recent work in astronomical photometry and photography. This recommendation was adopted by the Academy.

The report of the committee for the award of this medal is as follows:

REPORT OF THE COMMITTEE.

To the National Academy of Sciences:

The committee on the Henry Draper medal begs leave herewith to report that it has carefully considered the investigations which have been made in astronomical physics since the award of this medal in 1885; and that, as a result of such consideration, the said committee desires to recommend that the Academy award this medal for the year 1887, to our fellow member, Prof. Edward C. Pickering, the director of the Harvard College Observatory, for his recent work in astronomical photometry and photography.

Professor Pickering was appointed to the position which he now holds in February, 1877. An examination of the annual reports which he has presented to the visiting committee of the observatory will show the

great amount and the great variety of the work which has been done there under his direction. Some of this work is purely astronomical; as an example of which, the excellent meridian circle work of Prof. William A. Rogers may be mentioned. But most of it is in the department of astronomical physics; and this it is to which the committee desires to direct attention.

The work in astronomical physics, which has been done in the observatory of Harvard College under Professor Pickering's immediate supervision, seems readily divisible into three classes: First, stellar photometry; second, stellar photography; and third, stellar spectrum photography.

I. The principal subdivisions of the photometric work are as follows:

(1) Observations of Jupiter's satellites at their disappearances in the shadow of the planet and their reappearances after the eclipse; with the object of determining the times at which these phenomena occur with greater accuracy than had hitherto been practicable.

(2) The determination of the relative brightness of all stars visible to the naked eye in the latitude of Cambridge.

(3) The determination of the relative brightness of several thousand stars of the first nine magnitudes, in order to fix the value of the arbitrary scales usually employed in estimating magnitudes.

(4) Comparisons of various objects at small apparent distances from each other, such as the components of double stars, different satellites of the same planet, etc.

(5) Numerous special investigations on proposed standards of magnitude, stars which have been used for comparison with variable stars, the light of nebulae, etc.

All this photometric work has gone uninterruptedly forward with the aid of special photometers ingeniously devised for the purpose by Professor Pickering.

The observation of the eclipses of Jupiter's satellites has long been regarded as important, not only in determining the motions of the satellites themselves, but also in ascertaining the velocity of light. It is obvious that the observation of the disappearance or reappearance of a satellite is necessarily a photometric observation, and therefore that the subject is one to which improved means of photometric research are peculiarly applicable. But previous to Professor Pickering's undertaking, no one appears to have recognized the advantages resulting from the use of photometric apparatus in the observation of these eclipses. Recently, however, these advantages have been recognized in France, and researches similar in character to those of Professor Pickering have been undertaken there.

It is not expected that the observations of the eclipses made at the Harvard College Observatory will be fully reduced and published until they have been continued through a complete revolution of Jupiter (about 12 years). The first observation of this sort was made on the

23d of June, 1878. Up to the beginning of the present year, the total number of eclipses observed was 358, thirty-nine of which had occurred since October, 1885. The accuracy with which an eclipse of the first satellite can be observed appears, from the preliminary reductions, to be very satisfactory, the probable error seeming to be less than a second of time. The eclipses of the three outer satellites will furnish results nearly as useful, since the greater number of comparisons obtained during each eclipse compensates to a considerable extent for the comparative slowness of the changes in the brightness of the object observed.

The meridian photometer of Professor Pickering was first brought into use in the summer of 1879. The work of determining by the aid of this instrument the relative brightness of the stars which are visible to the naked eye was begun on the 25th of October of that year and was continued through 700 series of observations, 4,260 stars being included in the catalogue. The total number of comparisons made was 94,476, four comparisons constituting a complete observation. These results, together with an extended discussion of the estimated magnitudes obtained for the same stars by careful observers, as well as the results of previous photometric determinations of their relative brightness, were published in Volume XIV of the Annals of the Observatory.

The success of this photometer led Professor Pickering to have a larger instrument constructed, of the same kind, but which could be applied to the measurement of telescopic stars. The new photometer has given perfect satisfaction, and has enabled the brightness of stars to the ninth magnitude to be measured with a deviation from accuracy not exceeding a tenth of a magnitude. Moreover, stars can be measured with this instrument at the rate of forty stars an hour for an entire evening; and under favorable conditions, even one star a minute may be thus measured. During the year 1886, 209 series of measurements were made by Professor Pickering and his assistant, the total number of separate photometric comparisons being 59,800. In 1885, 50,000 such comparisons were made, and in 1884, 27,500. A comparison of the Cambridge results with those obtained at Pulkowa shows that the average deviation of a measurement of the difference in brightness between two stars observed at both places does not exceed one-tenth of a magnitude. The principal work of the meridian photometer, the revision of the *Durchmusterung* magnitudes, is now approaching completion, nine-tenths of the observations having already been made.

It would seem to be manifest from the facts above enumerated, that practical stellar photometry has now been carried on for the first time by Professor Pickering to that extent and with that completeness which are requisite to give it general interest and importance.

II. The earliest investigations in stellar photography which were undertaken by Professor Pickering were begun in 1882, with the aid of a grant from the Rumford fund of the American Academy. They have

been continued subsequently by an appropriation made in June, 1885, from the Bache fund of the National Academy. The work which has been done in this direction has been summarized as follows:

"The present research was undertaken in 1882 with a lens having an aperture of only $2\frac{1}{2}$ inches. It was shown that photography could be used as a means of forming charts of large portions of the sky, and of determining the light and color of stars in all portions of the heavens. Photographs of the trails of close polar stars no brighter than the eleventh magnitude were obtained without clockwork." "In 1885, the investigation was resumed with a telescope having an aperture of 8 inches. With this, one hundred and seventeen stars within one degree of the pole, one of them no brighter than the fourteenth magnitude, left trails. The average deviation of the measures of the brightness of these stars on different photographs was less than a tenth of a magnitude; a greater accordance than is given by any other photographic method. A similar result was obtained from the Pleiades, of which group over fifty left trails. Similar trails are now being obtained of the stars north of -30° in all right ascensions. This work began in the autumn of 1885, at 23^h, and has already been completed for more than half the sky. By photographing on the same plate polar stars near their upper and lower culminations, material has been accumulated for determining the atmospheric absorption each night of observation.

"A study has been made of the application of photography to the transit instrument. Measurements of the trails show that the time of a transit may be determined from its trail with an average deviation of 0.03 second, which is about half the corresponding deviation of eye observations.

"Charts may be constructed 5° square, having the same dimensions as those of Peters and Chacornac. A single exposure of one hour is required, and it is not necessary that the observer should remain with his eye at the telescope to correct the errors of the clock. Miscellaneous observations have been secured of the Pleiades, of the nebula in Orion, of Jupiter's satellites, and of various other objects."

III. Stellar spectrum photography, in which Professor Pickering has achieved his most marvelous results, was undertaken by him first in 1885, upon a plan entirely novel. Two important features of advantage were possessed by the new arrangement. The first consisted in placing the prism in front of the object glass; a plan already suggested by Fraunhofer, and tried for eye observations by Secchi. The second consisted in placing the refracting edge of the prism parallel to the motion of the star; *i. e.*, if the star was on the meridian, the refracting edge would be horizontal, and the spectrum north and south. The first device gives not only an enormous increase of light, but renders it possible for the stars over the entire field to impress their spectra upon the plate. Hence, while previous observers have been able to photograph but one star at a time, and have not obtained satisfactory

results from stars fainter than the second or third magnitude, Professor Pickering has often obtained more than 100 spectra on a single plate, many of them of stars not brighter than the seventh or eighth magnitude. By means of the second device, the necessary width of the spectrum is secured. If clockwork were employed, the spectrum of a star would be a line too narrow to show any details. Formerly, a cylindrical lens was used to widen the spectrum; but by placing the prism as above, and by suitably varying the rate of the clock, any desired width can be given to the spectrum simply by the motion of the star itself. One millimetre was found to be the best width.

The first experiments were made in May, 1885, by placing a 30° prism in front of a lens of $2\frac{1}{2}$ inches aperture. No clockwork was used, the spectra being formed of the trails of the stars. In the spectrum of the pole star, over a dozen lines could be counted, and in that of α Lyrae, the characteristic lines were shown very clearly with an exposure of only two or three minutes. In the fall of 1885, two prisms were obtained 20 centimetres in clear aperture, and having angles of 5° and 15° , respectively. These could be placed in front of the object glass of the 8-inch photographic telescope. With this apparatus, systematic operations were begun. The research, however, proved too large for the Bache appropriation. Whereupon, Mrs. Henry Draper came forward, early in 1886, and generously offered not only to defray the expenses of the investigation as a memorial to Dr. Draper, but to put at Professor Pickering's disposal the 11-inch refractor, with its photographic corrector, with which Dr. Draper has taken many of his later stellar photographs. The investigation was thereupon extended by Professor Pickering, and divided into three parts. The first included a general survey of stellar spectra, each spectrum being photographed with an exposure of not less than five minutes. These photographs generally exhibited the spectra of all stars brighter than the sixth magnitude with sufficient distinctness for measurement. The second research related to a determination of the spectra of the fainter stars. Each photograph taken received an exposure of one hour, so that the spectra of all the stars not fainter than the eighth or ninth magnitude and included in a region 10° square were represented upon the plate. For both these investigations, the 8-inch Bache photographic telescope was employed. The third research related to a more detailed study of the spectra of the brightest stars. For this work the Henry Draper 11-inch corrected refractor was used, Mrs. Draper having provided a small observatory for it in Cambridge, and also the mounting. Four prisms were constructed, each of 15° , of which three had a clear aperture of nearly 11 inches, the fourth being somewhat smaller, the whole weighing more than 100 pounds and occupying a cubic foot of space.

The results already attained in these three directions have been satisfactory. In the first research, the first cycle, covering the entire sky from zero to 24 hours of right ascension, has been completed. This

cycle contains 257 plates, all of which have been measured, and a large part of the reduction completed. 8,313 spectra have been measured on them, nearly all of which have been identified, and the places of a greater portion of the stars brought forward to the year 1900, and entered in catalogue form. In the second cycle, which will complete the work, 64 plates have been taken, of which 51, including 2,974 spectra, have been measured and identified. In the second research, which has been carried on in the intervals when the telescope was not needed for other purposes, 99 plates, with an exposure of an hour, have been obtained, on which 4,442 spectra have been measured, in one case over 300 spectra being shown on a single plate. In both these researches taken together 15,729 spectra of bright and faint stars have been measured. In the third research, the first results of which were obtained in October last, a considerable number of excellent photographs have been obtained, the results of which can be stated only after a long series of measurements, and a careful reduction and discussion of them. Some points of interest, however, are shown on inspection. A photograph of α Cygni, taken November 26, 1886, shows that the H line is double, its two components having a difference in wave length of about one ten-millionth of a millimetre.* A photograph of Omicron Ceti shows that the lines G and H are bright, as are also four of the ultra-violet lines characteristic of spectra of the first type. The H and K lines in this spectrum are dark, showing that they probably do not belong to that series of lines. The star near X' Orionis, discovered by Gore, in December, 1885, gives a similar spectrum, which affords additional evidence that it is a variable of the same class as O Ceti. Spectra of Sirius show a large number of faint lines beside the well-known broad lines.

Professor Pickering has also devised a new method of enlarging these original photographs, which also removes the inequalities in density in the negatives, appearing as bands parallel to the length of the spectrum. A cylindrical lens is placed close to the enlarging lens, with its axis perpendicular to the spectrum lines. In this way, the length of the spectrum is increased only five times, while its width is increased nearly one hundred; *i. e.* from 1 millimetre to about 4 inches. This arrangement greatly reduces the difficulty arising from the feeble light of the star. Until very lately, the spectra in the original negatives were made very narrow, since otherwise the intensity of the starlight would have been insufficient to produce the proper decomposition of the silver particles. The enlargement being made by daylight, the vast amount of energy then available is controlled by the original negative, the action of which may be compared to that of a telegraphic relay. The copies, therefore, represent many hundred times the original energy received from the stars.

* It has long been known that the H line is also double (bright) in the spectrum of the solar chromosphere,

The deed of trust under which this committee is acting provides "that the investigation for which it (the Henry Draper medal) is awarded, or the completed publication thereof, shall have been made since the time of the last preceding award and presentation of said medal." In consequence, the committee recommends the award to Professor Pickering, for the specific investigations in stellar photometry and photography above mentioned, which have been made since the month of April, 1885, the time of the last preceding award and presentation of the said medal. This comprises, it is believed, the whole of the photographic work done at the Harvard College Observatory, and a large and important part of the photometric work.

In the opinion of the committee, Professor Pickering has displayed in these researches a skill, ingenuity, and vigor, which entitle him to an honorable place among the scientific men of our own or of any previous age.

All of which is respectfully submitted.

GEORGE F. BARKER.
WOLCOTT GIBBS.
SIMON NEWCOMB.
CHARLES A. YOUNG.
ARTHUR W. WRIGHT.

Committee on the Henry Draper Medal.

April 21, 1887.

On the evening of April 18, 1888, at a public session of the Academy, the second Henry Draper medal was, in behalf of the Academy, presented by the president to Prof. E. C. Pickering, of the Harvard Observatory, for his work in astronomical photometry and photography.

AWARD OF THIRD DRAPER MEDAL.

At a special session of the Academy, held in Philadelphia, November 13, 1889, Mr. George F. Barker presented the following recommendation of the committee on the Henry Draper medal:

The committee on the Henry Draper medal recommend to the National Academy of Sciences the award of the Henry Draper medal to Prof. Henry A. Rowland, of Baltimore, for his researches on the solar spectrum.

This recommendation was adopted by the Academy.

THE LAWRENCE SMITH FUND.

During the April session, 1884, the president announced that the widow of Prof. J. Lawrence Smith, late an honored member of the Academy, intended to place at the disposal of the National Academy of Sciences the sum of \$8,000, as a memorial fund to promote the study of meteoric bodies.

Upon recommendation of the council, the Academy adopted the following resolution :

Resolved, That the Academy hears with gratification the announcement that Mrs. J. Lawrence Smith intends to intrust to it a fund to promote the study of meteoric bodies, and hereby signifies its readiness to accept the trust.

The Academy also adopted the recommendation of the council, "that the president be authorized to communicate with Mrs. J. Lawrence Smith, and make what arrangements were necessary."

The following is the text of the deed of gift of Mrs. Smith :

DEED OF TRUST OF MRS. J. LAWRENCE SMITH.

Know all men by these presents, that I, Sarah Julia Smith, of the city of Louisville, and county of Jefferson, State of Kentucky, in consideration of the premises, and of the acceptance of the within trust by the National Academy of Sciences, and also in consideration of divers other good and valuable considerations, I, the said Sarah Julia Smith hereto moving, have given, granted, assigned, transferred, and set over, and by these presents do give, grant, assign, transfer, and set over, unto the said National Academy of Sciences, and to their successors forever, a certain fund or sum of \$8,000, with the interest and income thereof, to have and to hold the same in trust nevertheless, upon the special trusts and for the uses and purposes following, to wit :

First. In trust, to invest and to reinvest the said sum of \$8,000, and to keep the same invested in good and safe securities, or in such other manner as shall be, in their opinion, best for the preservation and maintenance of such fund.

Second. In trust, to use the interest and income thereof for the purpose of striking a gold medal, which shall be called the "Lawrence Smith Medal," shall be of the value of \$200 in gold, and shall be struck in a die, to be selected and presented to the said National Academy of Sciences by me, the said Sarah Julia Smith. And the said medal shall be awarded and presented from time to time, by the said National Academy of Sciences, to any person in the United States of America or elsewhere, who shall make an original investigation of meteoric bodies, the results of which shall be made known to the public, such results being in the opinion of the said National Academy of Sciences of sufficient importance and benefit to science to merit such recognition ; provided, however, that said medal shall not be presented or awarded more frequently than once in 2 years, and provided, also, that the investigation for which it is awarded, or the completed publication thereof, shall have been made since the time of the last preceding award and presentation of said medal.

Third. In trust, that if investigations of equal importance shall be made in regard to meteoric bodies at or about the same time in the United States of America and also in some other part of the world, each of which investigations might, in the opinion of the said Academy, entitle the investigator to be considered as a competitor for said medal, preference shall be given in the awarding thereof to investigations made by a citizen of the said United States of America.

Fourth. In trust, that if the said die shall at any time be lost, destroyed, broken, or in any manner rendered unfit for the purpose of striking the said medal, a new die shall be procured exactly similar to the one so selected and presented as aforesaid, and shall be paid for out of the interest and income of the said fund ; and such sum or sums of money as shall at any time or times be necessary for the care, custody, and protection of the said die or of the said fund hereby given shall also be taken from and out of the interest and income of the said fund whenever the same shall be deemed necessary by the said National Academy of Sciences.

Fifth. In trust, that if at any time or times the interest and income of said trust fund of \$8,000 shall exceed the amount necessary for the striking of said medal and the care of the said die and of the fund, such surplus over and above the sum or sums

so required for the purposes of the trust, as hereinbefore recited and set forth, shall be used in such manner as shall be selected by the National Academy of Sciences in aid of investigations of meteoric bodies, to be made and carried on by a citizen or citizens of the United States of America.

And the said National Academy of Sciences doth signify its acceptance of the said fund of \$8,000, and doth engage to hold and manage the same upon the trusts and for the uses and purposes herein mentioned and set forth.

In witness whereof I, the said Sarah Julia Smith, have hereunto set my hand and seal, and the said National Academy of Sciences hath hereunto caused its corporate seal to be affixed, and these presents to be subscribed by its president, this 6th day of May, in the year 1884.

SARAH JULIA SMITH. [SEAL.]

Sealed and delivered in the presence of—

ANNIE C. NORTON.

J. H. CAPERTON. [SEAL.]

O. C. MARSH,

President of the National Academy of Sciences.

Witnesses to signature :

GEO. J. BRUSH.

E. S. DANA.

At a stated session of the Academy, held in April, 1885, the following resolutions in regard to the Smith fund were adopted upon recommendation of the council :

Resolved, That the National Academy of Sciences gratefully acknowledges the receipt of a fund of \$8,000, presented in trust by Mrs. Sarah Julia Smith to promote the study of meteoric bodies; that the Academy adopts and confirms the action of its president in accepting such trust, and promises the faithful execution of the same.

Resolved, That the Academy appreciates the confidence reposed by the donor in selecting it as the trustee for executing her purpose, and her further liberality in providing dies for a suitable medal.

Resolved, That a committee of 5 members be appointed by the president to recommend to the Academy such measures as may be necessary to the proper execution of the trust.

Resolved, That the said committee be charged with the duty of preparing an expression of appreciation by the Academy of the munificence of Mrs. Smith, and of having such expression suitably engrossed and signed by the proper officers for transmission to the donor.

Resolved, That the treasurer be authorized to reserve from the income of the J. Lawrence Smith fund, \$133 each year, to be invested from time to time until the invested fund is increased to \$8,000, the amount intrusted to the Academy by Mrs. Smith.

COMMITTEE ON THE SMITH FUND.

The president appointed as permanent committee on the Smith fund the following members :

Wolcott Gibbs, *Chairman*.

G. J. Brush.

R. Pumpelly.

A. Hall.

L. M. Rutherford.

ACKNOWLEDGMENT TO MRS. SMITH.

Mrs. SARAH JULIA SMITH:

MADAM: It is our duty as a committee of the National Academy of Sciences to tender to you the thanks of the Academy for the munificent donation which you have intrusted to it. With the most sincere appreciation of the spirit which dictated your gift, and with profound respect and sympathy, we now discharge the duty which has devolved upon us.

The noble and unselfish life of our lamented fellow member, Dr. J. Lawrence Smith, was devoted to science; and of the work which he did, and which confers eternal honor upon his name, no part is more deeply interesting or more permanently valuable than his researches on the chemical constitution of meteorites, researches in which he first established in these bodies the existence of hydrocarbon. His beautiful collection has become the property of one of our most prominent colleges. His name and fame are national possessions. The income of the fund which you have intrusted to the Academy, worthily bestowed, can not fail to assist materially in extending our knowledge of meteoric phenomena.

The Academy accepts the trust, which honors the giver, which recalls the lifelong services of one of its most honored members, and which promises to extend the boundaries of the science to which he was devoted. We tender to you, madam, in the name of the Academy, our grateful acknowledgments.

WOLCOTT GIBBS, *Chairman.*

G. J. BRUSH.

A. HALL.

R. PUMPELLY.

L. M. RUTHERFURD.

Committee.

July 27, 1885.

PRESENTATION OF FIRST LAWRENCE SMITH MEDAL.

In December, 1887, the committee on the Smith fund unanimously recommended that the first J. Lawrence Smith medal be awarded to Prof. Hubert A. Newton, of New Haven, Connecticut, in recognition of his eminent services in the investigation of the orbits of meteors. This recommendation was adopted by the Academy at the April meeting, 1888, and at a public session, held on the evening of April 18, 1888, the first Smith medal given by the Academy was presented to Professor Newton by the president, who, in a short address, gave the reasons for its award.

The report of the committee is as follows:

REPORT OF THE COMMITTEE.

To the National Academy of Sciences:

Professor Newton's study of the subject extends over a long series of years, and has led to results of very great popular interest as well as scientific importance. Meteors in the sense in which the word is now used have from the remotest ages attracted the attention of mankind. Observations of greater or less value have long been accumulating. Chemistry had shown that meteoric bodies which fall upon the earth contain no element not already known as a constituent of the

crust of the earth, but astronomy had not yet brought the wanderers of the heavens into a system and shown that they are moving in definite orbits, and are not distributed by chance in the celestial spaces. Professor Newton's first paper was published in 1860, and was succeeded by a number of others, the last having been read to the National Academy, in April of the present year.

From a careful analysis of the early observations of the archives, going back to the year 902, as well as of modern observations, Professor Newton showed that the connection between the November star showers of 1799 and 1833 had been concealed by the fact, that the day of the shower was moving from October 12, A. D. 902 to November 13, 1833. The shower was thus traced back over 900 years, and the persistence of this 33-year period was distinctly shown. It was also proved that the paths in which the meteors are moving about the sun must be one of five sharply defined orbits. A method of deciding which one of these orbits was the true one was suggested. Professor Adams of Cambridge (England) then showed in the manner indicated which orbit was the correct one, and so prepared the way for proving beyond question, as soon as Oppolzer published the orbit of the comet of 1886, that this comet and the November meteors belong to one system. Schiaparelli had just shown that the August meteors belonged to the same system as another comet.

In a memoir on shooting stars, published in the memoirs of the National Academy (read August 6, 1864), Professor Newton for the first time proved that the orbits of these bodies are not approximately circular like those of the planets, but that they resemble more the parabolic orbits of comets. This was the first step towards the establishment of a relationship between comets and meteors. In the same memoir, Professor Newton undertook to show how many shooting stars enter the air each day. The result of the discussion was the number 7,500,000, but later observations increase this number materially, and perhaps even double it. Another interesting and suggestive question also considered was this: As the earth moves round the sun, how thickly filled with meteorites is the space which it traverses? To this question, the answer given is, as a first approximation, 13,000 in each unit of space of the size of the earth itself.

In a subsequent paper, Professor Newton made an attempt to determine whether comets come originally from the solar system or from outside of it. The investigation was based upon the observed facts, and the results obtained are still under consideration by astronomers. The argument that the meteoric stones of our cabinets were all fragments of comets was again brought out in a lecture delivered at the Sheffield Scientific School. This again was followed by a paper on the effect upon the earth's velocity produced by small bodies passing near the earth. In this paper, it is shown that while small bodies which pass

near the earth, but do not meet it, have a real effect in stopping the earth or the moon, this effect is much too small to be sensible.

In a discussion of the Biela meteors of November 27, 1885, Professor Newton, among other facts, brought out the very interesting and important one, that the meteors left the comet since 1840, and that the disintegration of the comets furnishing meteor streams is a more rapid process than has been usually supposed.

Finally, in a paper read before the National Academy of Sciences, April 19, 1888, Professor Newton has established the following propositions:

(1) The meteorites which we have in our cabinets, and which were seen to fall, were originally (as a class, and with a very small number of exceptions) moving about the sun in orbits that had inclinations less than 90° ; that is, their motions were direct and not retrograde.

(2) The reason why we have only this class of stones in our collections is not one wholly or even mainly dependent on the habits of men, nor on the times when men are out of doors, nor on the places where men live, nor on any other principle of selection acting at or after the arrival of the stones at the ground. Either the stones which are moving in the solar system across the earth's orbit move, in general, in direct orbits, or else, for some reason, the stones which move in retrograde orbits do not in general come through the air to the ground in solid form.

(3) The perihelion distances of nearly all the orbits in which these stones moved were not less than 0.5 nor more than 1.0, the earth's radius vector being unity.

In the judgment of the committee, these researches are of a very high order of merit and of interest.

WOLCOTT GIBBS.

GEORGE J. BRUSH.

RAPHAEL PUMPELLY.

ASAPH HALL.

L. M. BUTHERFURD.

Committee.

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IN THE SENATE OF THE UNITED STATES.

JANUARY 19, 1891.—Ordered to be printed.

Mr. MITCHELL submitted the following

RESOLUTION:

[Directing the Secretary of War to furnish to the Senate certain information relative to selecting a site for the location and establishment of a gun factory on the Pacific coast.]

Resolved, That the Secretary of War be, and he is hereby, directed to transmit to the Senate at his earliest convenience copies of all recommendations and statements of boards of trade, chambers of commerce, and other representative commercial bodies, and of all municipal corporations, together with copies of statements, documents, and other papers whatsoever at any time heretofore presented since the 1st day of October last, either directly to the War Department or to the military board heretofore appointed under the provisions of an act of last session of the present Congress, approved August, 1890, for the purpose of examining into the facilities for producing steel forgings, and for the purpose of selecting a site for the location and establishment of a gun factory on the Pacific coast, which relate to the subject of a site for such gun factory, and submitted in the nature of information, and as showing the commercial and military importance, and other facilities of the several sites suggested to such board as proper to be considered as suitable and proper sites for such purpose.

IN THE SENATE OF THE UNITED STATES.

JANUARY 19, 1891.—Ordered to be printed.

Mr. GIBSON presented the following

**MEMORIAL FROM THE CHAMBER OF COMMERCE AND INDUSTRY
OF LOUISIANA PROTESTING AGAINST THE PASSAGE OF THE
CONGER LARD BILL.**

The undersigned respectfully represent that the amount of cotton seed crushed now exceeds 1,000,000 tons, which cost, when manufactured, an average of \$15 per ton. This sum is represented by the first cost of the raw material paid to planters, the freight paid for transportation thereon to mill points, and the labor and material used in manufacturing. In other words, the cotton-seed industry pays at mill door, mainly to the laboring classes of the South, an annual tribute of some \$15,000,000.

To levy a tax on compound lard simply means a lower price for cotton seed, and at least a curtailment, if not the complete annihilation, of the cotton seed crushing industry. The plants established throughout the South for the crushing of cotton seed have cost all of \$25,000,000, and are paying taxes on fully that much assessment. The hardship inflicted upon the laboring classes in depriving them of the revenue had from the sale and manufacture of cotton seed would also react on the State in depriving it of the revenue derived from that branch of Southern industry.

We therefore represent that to tax compound lard is to tax Southern agriculture and Southern industry to the so-called benefit of other sections, whilst in reality it benefits no one, and is indirectly a tax on the consumer, of the poorer classes of all sections of our common country, who are not able to afford to pay the price of animal lard, and are willing to accept in lieu thereof a pure, cheap, and wholesome substitute.

We trust that an appeal to the manhood and innate sense of justice and fair play of Congress will be sufficient to defeat this obnoxious measure, and to have our industries left untrammelled and untaxed.

Respectfully,

T. R. Roach, acting president; Robert Bleakley, secretary Chamber of Commerce and Industry; Chas. Garvey, president the D. & L. Exchange; C. E. Dirmeyer, secretary the D. & L. Exchange; J. C. Morris; R. M. Walmsley; Wm. Palpey; Geo. S. Whitney; N. B. Sligh; S. O. Thomas; W. P. Nicholls; H. Gardes; Fred. Peters; P. Lanaux, Wm. Palpey; A. Bennet; Jas. J. Tarleton; N. Landey; H. D. Hopkins; C. Kohn; Thos. Herndon; J. L. Herring, president; Asa Brinkman, secretary; W. I. Hodgson, president board of auctioneers and auctioneers' exchange, W. A. Kernaghan, secretary; L. M. Finley, president F. U. Association of New Orleans, George Mather, secretary; by authority of the board of directors, The Louisiana Sugar and Rice Exchange of New Orleans, Samuel Delgado, president, attest D. D. Colcock, secretary; Charles Chaffer, president New Orleans Cotton Exchange.

IN THE SENATE OF THE UNITED STATES.

JANUARY 22, 1891.—Ordered to be printed.

Mr. GIBSON submitted the following

A M E N D M E N T S

Intended to be proposed by Mr. GIBSON to the resolution of Mr. ALDRICH (Mis. Doc. 33), proposing certain amendments to the rules of the Senate, viz: Omit the part in brackets and insert the parts printed in *italics*:

Resolved, That for the remainder of this session the rules of the Senate be amended by adding thereto the following:

When any bill, resolution, or other question shall have been under consideration for a reasonable time it shall be in order for any Senator to demand that debate thereon be closed. On such demand no debate shall be in order, and pending such demand no other motion except one motion to adjourn shall be made. If such demand be seconded by a majority of *two-thirds* of the Senators present, the question shall forthwith be taken thereon without debate. If the Senate shall decide to close debate on any bill, resolution, or other question, the measure shall take precedence of all other business whatever, and the question shall be put upon the amendments, if any then pending, and upon the measure in its successive stages according to the rules of the Senate, but without further debate, except that every Senator who may desires hall be permitted to speak upon the measure, including all amendments, not more than once, and not exceeding [thirty minutes] *one hour*.

After the Senate shall have decided to close debate as herein provided, no motion shall be in order but a motion to adjourn or to take a recess, when such motions shall be seconded by a majority of the Senate.

When either of said motions shall have been lost or shall have failed of a second, it shall not be in order to renew the same until one Senator shall have spoken upon the pending measure or one vote upon the same shall have intervened.

Pending proceedings under the foregoing rule no proceeding in respect of a quorum shall be in order until it shall have appeared on a division or on the taking of the yeas nays that a quorum is not present and voting.

Pending proceedings under the foregoing rule all questions of order, whether upon appeal or otherwise, shall be decided without debate, and no obstructive or dilatory motion or proceedings of any kind shall be in order.

For the foregoing stated purposes the following rules, namely, VII, VIII, IX, X, XII, XIX, XXII, XXVII, XXVIII, XXXV, and XL are modified.

IN THE SENATE OF THE UNITED STATES.

JANUARY 22, 1891.—Ordered to be printed.

Mr. STEWART submitted the following

AMENDMENTS

Intended to be proposed by Mr. Stewart to the resolution of Mr. Aldrich (Mis. Doc. 33) proposing certain amendments to the rules of the Senate, viz:

Strike out all after the word "whatever," in line 13, down to and including the word "debate," in line 17, and insert the following: "and debate on pending amendments and such amendments as may be offered while the measure is under consideration shall be limited as provided in rule 8."

After the word "motion," where it occurs the second time in line 22, insert the following: "to recommit with or without instructions, to lay on the table."

Strike out all of lines 29, 30, 31, and 32.

After the word "rule," in line 33, insert the following: "rule 17 shall be suspended, and."



IN THE SENATE OF THE UNITED STATES.

JANUARY 22, 1891.—Ordered to be printed.

Mr. DOLPH submitted the following

RESOLUTION:

Resolved, That the Committee on the Judiciary be, and they are hereby, directed to inquire and report to the Senate, at as early a day as practicable, whether clause 3 of rule 5 of the rules of the Senate is such a compliance with the requirements of section 5 of article 1 of the Constitution as to the manner in which the attendance of absent members may be compelled, as to authorize less than a quorum of the Senate when in session to compel the attendance of absent members, and whether a direction by the Senate, less than a quorum being present, to the Sergeant-at Arms of the Senate to compel the attendance of absent members as provided for in said third clause of rule 5 is a sufficient warrant and authority to the Sergeant-at-Arms to authorize him to use force if necessary to bring such absent Senators into the Senate chamber.

IN THE SENATE OF THE UNITED STATES.

JANUARY 22, 1891.—Presented by Mr. COCKRELL, and ordered to lie on the table and be printed.

MEMORIAL OF THE MECHANICS' EXCHANGE OF ST. LOUIS, MO.,
PRAYING THE PASSAGE OF THE TORREY BANKRUPT BILL.

ROOMS OF THE MECHANICS' EXCHANGE,
St. Louis, January 13, 1891.

To the Senate and House of Representatives in Congress assembled:

The Mechanics' Exchange of St. Louis hereby submits an address to your honorable body praying for the immediate consideration and passage of the Torrey bankrupt bill, as follows:

First. The members of this exchange, in common with the members of the industrial, commercial, and professional world, hereby call the attention of your honorable body to the fact that you have not for 11 years exercised the power conferred solely upon you to enact a national bankrupt law as provided by the Constitution of the United States.

Second. The mechanics of the country are vitally interested in the general prosperity of the whole people, because in times of depression and distrust occupations which give employment to them are greatly curtailed; in times of prosperity they are interested in having their rights protected. They have no desire to obtain preferences as against their fellows or others, and therefore ask for such legislation as will substitute equitable provisions, securing the quick and cheap pro rata distribution of the assets of bankrupts as a substitute for the "grab game," pursuant to which creditors who first take alarm are enabled to collect the amount of their claims while others realize nothing, and the debtor suffers the losses incident to the shrinkage of property and sacrifice sales, and pays costs which are for the most part exorbitant and unnecessary.

Third. The members of this exchange, acting in their capacity as employés and creditors of firms, persons, and corporations for whom they have in hand important undertakings, or as debtors in the purchase of supplies and employers of labor, are interested in a law which shall give and guaranty to them reciprocal rights and responsibilities and amply and fully protect the interest of those who deal with them, and hereby express the belief that the enactment of a voluntary to the exclusion of an involuntary bankrupt law, or the reverse, would prove destructive to their best interests and those of the country.

Fourth. Attention is called to the fact that the stringency of the times is not due to the absence of money, but to a want of confidence, and that the attempt to throw additional money into circulation will be unavailing so long as the tendency prevails to hoard it, whereas the

passage of an equitable law, the provisions of which would prevent precipitate action by creditors, fraudulent acts by debtors, and guaranty and protect the rights of all classes to transactions on credit, would at once relieve the stringency of the times and restore trade to its normal condition.

Fifth. There is not now pending a single bill which would, to the same extent as the bankruptcy bill, if enacted, give relief to the insolvent debtors of the country or so enhance the prospects of the solvent debtors by extending their lines of credit and guarantying them from unnecessary or malicious attacks from their creditors; such security to creditors against their dishonest debtors and thereby enhance their property rights; or to the same degree beget a spirit of hope and security and redound to the benefit of all classes of people in all parts of the country.

In view of the foregoing this exchange submits the following:

Resolved, That the Mechanics' Exchange of St. Louis, in common with the members of the industrial, commercial, and professional world, hereby calls upon Congress to exercise the power conferred solely upon it to pass uniform laws upon the subject of bankruptcies.

Resolved, further, That the enactment and proper administration of a national bankrupt law will add to the general prosperity of the whole people, because it will tend to lessen the number of periods of depression and distrust, protect the rights of the members of the industrial world at all times, prevent the giving or receiving of preferences, provide for the speedy and economical pro rata distribution of the assets of bankrupts, and prevent the seizing of the property of debtors by some of their creditors in violation of law and in derogation of the rights of the debtors and other creditors.

Resolved, further, That the members of this exchange, in their capacities both as creditors and debtors, call for the enactment of a law which shall contain both the voluntary and involuntary systems, and thereby provide reciprocal rights and responsibilities for parties to the same transaction in their capacities as creditor and debtor.

Resolved, further, That Congress is called upon to relieve the present depressed condition of the country by the enactment of the Torrey bankrupt bill.

Resolved, further, That this exchange regards the subject of bankruptcy as the most important now pending before Congress, and therefore urgently petitions for the immediate consideration of that subject.

Resolved, further, That copies of this address be sent by our officers to our Senators and Representatives in Congress.

A true copy from the records.

[SEAL.]

RICHD. WALSH,
Secretary.

[St. Louis Mechanic and Tradesman, published weekly by William Wilson & Co., proprietors, 926 North Broadway. S. Sheldon, editor.]

ST. LOUIS, January 3, 1890.

A commercial transaction must have two parties to it, the buyer and the seller, who become the debtor and the creditor until the matter is settled. Before this consummation is reached misunderstandings may spring up and difficulties may arise to prevent such settlements in due course. Most of these are arranged amicably, though the aid of the law is not unfrequently called in; but a great difficulty has arisen, and one which the law has so far dealt with in a very unsatisfactory way, in cases where the debtor is unable to discharge his liabilities in full.

It ought, of course, to be possible for an honest man who finds himself so situated to disclose his condition fully to his creditors, and let them decide whether they will accept what he is able to pay, and discharge him from further obligation, or will wind up his estate and divide the proceeds pro rata. But he can not hope to do this now, for the moment he admitted his condition his property would be attached by some smart creditor and the arrangement rendered impossible. He might, it is true, make an assignment, but, then, small creditors are very apt to make themselves felt by objecting to any compromise unless they are paid in full; and the expenses of the assignee, etc., soon make the deficiency seriously larger.

Attempts have been made from time to time, in this and other countries, to meet the difficulty, with more or less success. We had a bankruptcy law which was repealed in 1879, and now, under existing State laws the rights of creditors are governed by forty-two different codes, the variance of which, and the difficulties that naturally arise under them, causing vexatious delays and increasing the expenses which, of course, in the end come out of the debtor's property. Under most of these State laws preferences may be given, and strong creditors are naturally apt to obtain them; so that one debt is paid, while another equally valid and due, is left out in the cold. The provisions which most of the State laws contain against dishonesty on the part of a debtor have been found to have no value for commercial purposes, especially where the creditor and the debtor are citizens of different States.

For these and other reasons the necessity for a stable and equitable law is very evident, and we think that the bill now before Congress, known as the Torrey bankrupt bill, has been wisely framed, and should become law at as early a date as possible. It is plain and concise in its language, and can readily be understood by the average citizen. Each subject has a chapter to itself, subdivided into sections which have titles and consecutive numbers. While it will, of course, supersede such State laws as are actually bankrupt laws, it avoids interference with all which are not bankrupt laws in the strictest sense, and thus escapes the complications which mainly caused the repeal of the old law.

The honest insolvent debtor will, under its provisions, be discharged from the amount of debt that may be left after the dividends accruing from his estate shall have been paid, while the dishonest insolvent will be punished according to the gravity of his offense, such punishment being awarded by the courts having jurisdiction in the State where the offense has been committed. The preventive effect of this will have a value which, from a commercial point of view, can hardly be overestimated. The honest debtor feeling that if he acts in accordance with the law he will be protected, will not be so strongly tempted to provide for those dependent on him by fraudulent transfers of property; nor will he be so liable to yield to the pressure of a powerful creditor and give him an unjust preference, while the small creditor will not be able to block the way to a compromise by his demand for payment in full. Justice will thus be done, not only between debtor and creditor, but also between one creditor and another.

The Torrey bankrupt bill provides for a prompt return of process issued in bankruptcy proceedings, for a prompt hearing and a speedy determination of the rights of all parties interested. Then it can be determined at once whether a composition is desired, or administration is considered necessary; and if the latter, prompt action will be taken by the court. The trustee is appointed by the creditors to represent their interest, and is paid a commission figured on the amount actually paid as dividends. The administration of bankrupt estates, under this law, will thus be both speedy and economical.

Mr. Jay L. Torrey, the well-known lawyer of this city, is the author of the bill we have been considering, and he has spared neither time nor trouble in perfecting it. Ten thousand copies of the bill were printed and distributed at the beginning of the movement; and these were accompanied by an invitation to criticism. In response to this, many valuable suggestions were received, and acted upon by Mr. Torrey—the only end in view by the author and promoters of the bill being the enactment of a wise and perfectly fair law. Such a law will do much to strengthen confidence in the minds of business men generally, and as a natural consequence will promote the prosperity of the country.

IN THE SENATE OF THE UNITED STATES.

JANUARY 22, 1891.—Presented, referred to the Committee on the District of Columbia, and ordered to be printed.

REPORT OF THE BRIGHTWOOD RAILWAY COMPANY, OF THE
DISTRICT OF COLUMBIA.

WASHINGTON, D. C., *January 24, 1891.*

To the Senate of the United States of America in Congress assembled :

In accordance with the terms of the charter of the Brightwood Railway Company of the District of Columbia, we have the honor to transmit to you for your information the following report:

(1) Since January 1, 1890, the road has been operated by the Metropolitan Street Railway Company, under verbal lease, pending the introduction of Mechanical Traction, known as "The Judson Pneumatic system." That this system is in process of construction still, and it is believed by the officers of the company, will be completed and in operation within the coming year from this date.

The motive power to be used in this system is compressed air, and a suitable site has been procured and a power house and an air compressing plant erected thereon. This plant is located on the east side of Seventh street extended, opposite Grant street.

(2) The gross receipts from the aforesaid lease have been \$635.35.

(3) The stockholders of this company at this date are as follows:

Name.	Shares.	Name.	Shares.
Harry L. Earle	1, 170	A. P. Fardon	1
H. D. Cooke	1	A. A. Thomas	3
Pitt Cooke	1	Frederick Stutz	20
F. W. Huidekoper	1	Lewis Walker	1
J. H. Taylor	1		
W. W. Dudley	1	Total	1, 200

(4) The officers of this company are as follows:

H. D. Cooke, vice president.

H. L. Earle, treasurer.

James H. Taylor, secretary.

Directors: H. D. Cooke, H. L. Earle, F. W. Huidekoper, Lewis Walker, W. W. Dudley, James H. Taylor, A. P. Fardon, Pitt Cooke, W. L. Judson.

We, the undersigned, do hereby certify to the correctness of the above statement.

HENRY D. COOKE.

Vice President.

JAMES H. TAYLOR,

Secretary.

Sworn and subscribed to before me this 24th day of January, A. D. 1891.

[SEAL.]

ROBT. V. HUGHES,

Notary Public.

IN THE SENATE OF THE UNITED STATES.

JANUARY 28, 1891.—Ordered to be printed.

The Vice President laid before the Senate the following

COMMUNICATION FROM THE COMMISSIONER OF FISHERIES IN
RESPONSE TO A RESOLUTION OF THE 18TH ULTIMO RELATIVE
TO THE ESTABLISHMENT OF A FISH HATCHERY IN NORTHERN
NEW YORK.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., January 26, 1891.

SIR: In obedience to Senate resolution of December 18, 1890, directing the United States Commissioner of Fish and Fisheries to report to the Senate as to the desirability of the establishment of a fish hatchery in northern New York, near the St. Lawrence River, I have the honor to report as follows:

The basin of the St. Lawrence, including Lake Ontario and Lake Champlain and the innumerable smaller lakes and tributary streams which drain into these, comprises fully one-half of the area of the State of New York, about one-fourth of the State of Vermont, and on the Canadian side a more considerable drainage area.

In Lake Ontario whitefish were formerly very abundant. The value of this fishery has declined year by year, and at present the production is relatively insignificant compared with the whitefish fisheries of Lake Erie, Lake Huron, and Lake Michigan.

In the waters referred to a like decline was in progress, but those who were interested in those fisheries were prompt to recognize the necessity of legislation to restrain and regulate the methods and apparatus and seasons of capture.

Artificial propagation was also systematically resorted to to supplement and reinforce natural reproduction, and whitefish hatcheries were established by the States of Michigan, Ohio, and Wisconsin and by the Canadian Government. Entering the field at a later date, the United States Commission has established stations for the collection and hatching of whitefish at Alpena, Mich., Duluth, Minn., and Put-in Bay, Ohio.

The result of this coöperative fish-culture work by the Canadian, State, and United States Fish Commissions has been not only to arrest the alarming decline that was in progress, but to determine a marked increase in the catch of whitefish in those waters in which fish-cultural work has been carried on.

The marked contrast between the present conditions of the whitefish fisheries of Lake Erie and Lake Ontario sharply defines and emphasizes the necessity of artificial propagation as a means of maintaining and

improving our important commercial fisheries and of creating such in waters where they have not before existed.

We can not afford to neglect so important an economic resource—one which gives such substantial and valuable returns for moderate expenditures.

We can not expect individual enterprise to undertake such work in public waters in the expectation of private gain. Men, however public-spirited, will not sow the seed of a harvest which all men may gather. Our lakes and rivers and coast waters must be farmed by the Government for the general use and under such regulations as will establish and maintain the largest production.

Another important commercial species which formerly existed in Lake Ontario in marvelous abundance, but which is now so rare as to be an object of curious interest when seen, is the Atlantic salmon. Sixty years ago each season it ascended the St. Lawrence in vast numbers and swarmed in all its tributaries. Following both shores of Lake Ontario it ascended all the smaller streams which fall into it and which afford suitable spawning grounds for the mature fish and favorable nurseries for the fry during their period of river life.

The following extract from the annual report of the department of marine and fisheries of Canada for the year ending June 30, 1869, will be instructive as well as suggestive:

SPECIAL REPORT OF MESSRS. WHITCHER AND VENNING ON FISH-BREEDING AT NEW CASTLE, ONTARIO.

We proceeded yesterday to New Castle, Ontario, in compliance with your directions, and made a personal inspection of the fish-breeding establishment there under charge of Mr. Wilmot. The premises are situated on Baldwin's or Wilmot's Creek, a small stream traversing the township of Clarke, in the county of Durham, and discharging into Lake Ontario about 40 miles east of Toronto. This creek is well situated for salmon, as it forms a natural inlet of the sheltered bend of the lake between Bend-head and Darlington.

Although at its entrance into the lake it passes through a marshy lagoon, the bed of the stream farther inland is of a gravelly nature and the water is pretty clear, regular, and lively in its flow.

In early times it was famous for salmon, great numbers of which frequented it every autumn for the purpose of spawning. They were so plentiful 40 years ago that men killed them with clubs and pitchforks, women seined them with flannel petticoats, and settlers bought and paid for farms and built houses from the sale of salmon.

Later they were taken by nets and spears, over 1,000 being often caught in the course of one night.

Concurrently with such annual slaughter manufactories and farming along the banks had obstructed, fouled, and changed the creek from its natural state and made it less capable of affording shelter and spawning grounds.

Their yearly decreasing numbers at length succumbed to the destruction practiced upon them each season from the time of entering the creek until nearly the last straggler had been speared, netted, or killed.

The history of the salmon fishery of Wilmot's Creek, so graphically told by the Canadian commissioners, has been repeated in every stream of the State of New York which drains into Lake Ontario and the St. Lawrence River. All were frequented by the salmon, and from each, each season, went out a numerous colony of parr and smolts, which descended the St. Lawrence to the gulf, where they remained until they had attained size and maturity, when, obeying the impulse of reproduction, they ascended the St. Lawrence and distributed themselves to all the tributaries of lake and river, carrying back to these inland waters the rich harvest of the sea which they had garnered.

This magnificent fishery has ceased to be. Did it exist to-day, and were the conditions which made such a fishery possible prevailing to-

day, a hundred streams now barren would afford salmon fishing as attractive as the more favored waters of Canada, and the catch by net in the lake itself would furnish the motive of a valuable commercial fishery.

The cause of the disappearance, practically, of salmon from the streams of the St. Lawrence Basin has been chiefly and primarily the erection of obstructions in all of the rivers, which have prevented the salmon from reaching their spawning-grounds, and so natural reproduction has been absolutely inhibited.

The restoration and maintenance of the white-fish fisheries of Lake Erie, or of the salmon fishery of the lake and rivers, would either of them furnish sufficient motive for liberal expenditures on the part of the Government, if we consider the matter from a purely practical and economic standpoint. It is not only possible, it is entirely practicable, to restore and maintain these fisheries by adequate recourse to means and agencies entirely within our control.

The regeneration of the fisheries must be accomplished through fish-cultural work, systematically and persistently pursued. Their maintenance must be assured by concurrent regulation of the lake fisheries by the United States and Canada and by the enforcement on the part of the State of New York of such regulations and requirements as will permit the salmon to ascend to their spawning-grounds. In the absence of such regulations and requirements it will not be reasonable to expect that the results of fish-cultural work will be permanent or compensating, however extensive such work may be.

A fish-cultural station planned to meet all the requirements must be very extensive and complete in all its appointments, and will involve a larger expenditure than would be required for a station devoted exclusively to the production of whitefish or the salmonidæ. The hatchery must be commodious, providing at once for the hatching of 100,000,000 of whitefish and for the incubation of 1,000,000 salmon ova. It must also provide trough accommodations for holding 1,000,000 salmon fry for some weeks after they begin feeding. Quarters, offices, storage rooms, and shops must be erected; an extensive system of ponds for rearing the salmon must be constructed, for none would be released in open waters until they were of sufficient size to have comparative immunity from capture by other fish.

At the first installation of the station and for several years it would be necessary to draw our supplies of whitefish ova from our collecting stations on the upper lakes and our salmon ova from Maine. With the improvement of the fisheries we should expect to find our eventual source of supply in Ontario waters, and the location of the station should be with reference to this. Wherever placed it should be convenient to transportation routes, and should control a gravity water supply which should be without stint or measure.

The cost of such a station, as I have indicated, complete in all its appointments, would not be less than \$20,000, exclusive of cost of site and water franchises, and for its maintenance there would be required an appropriation of \$9,000 per annum.

Respectfully,

MARSHALL McDONALD,
U. S. Commissioner of Fisheries.

Hon. LEVI P. MORTON,
Vice President.

LETTER
OF THE
COMMISSIONERS OF THE DISTRICT OF COLUMBIA,
TRANSMITTING

A report upon the cost of gas and electric lighting in the District of Columbia.

JANUARY 28, 1891.—Referred to the Committee on the District of Columbia, and ordered to be printed.

OFFICE OF THE COMMISSIONERS, D. C.
Washington, D. C., January 27, 1891.

SIR: The Commissioners of the District of Columbia have the honor to transmit herewith a report, prepared under the direction of the Engineer Commissioner, on the cost of gas and electric lighting for municipal purposes in the District of Columbia, in compliance with the following provision of the District appropriation act, approved August 6, 1890:

That the Commissioners of the District of Columbia shall investigate, ascertain, and report to the second session of the Fifty-first Congress what deduction may be made for gas and electric lighting, both for annual and for five-year and for ten-year contracts, and that they be authorized to invite proposals for supplying said light at reduced rates, and in this they are not limited to any one system.

This report has been approved by the Board of Commissioners.
Respectfully,

J. W. DOUGLASS,
President Board of Commissioners, D. C.

Hon. LEVI P. MORTON,
President United States Senate.

OFFICE OF THE ENGINEER COMMISSIONER,
Washington, D. C., January, 28, 1891.

SIR: Complying with your instructions, I have the honor to submit the following report upon the cost of gas and electric lighting in the District of Columbia.

The provision of law under which this report is made, is contained in the act making appropriations for the expenses of the District of Columbia for the fiscal year ending June 30, 1891, and for other purposes, approved August 6, 1890, and is as follows:

Provided further, That the Commissioners of the District of Columbia shall investigate, ascertain, and report to the second session of the Fifty-first Congress, what deduction may be made for gas and electric lighting, both for annual and for five-year and ten-year contracts, and that they be authorized to invite proposals for supplying said light at reduced rates, and in this they are not limited to any one system.

2 GAS AND ELECTRIC LIGHTING IN DISTRICT OF COLUMBIA.

Under this provision the Commissioners advertised for proposals, using the form of advertisement hereto appended. Letters were also written to the Washington and Georgetown gas companies, the present contractors for gas lighting, and to the United States Electric Lighting Company, which now maintains the public arc lamps.

Copies of these letters are also appended.

Eight replies in all were received in response to the Commissioners' advertisement and letters of inquiry. Copies of the advertisement and the replies are to be found in the appendix. Some of the letters are much more definite than others in respect to the terms offered, which may be tabulated as follows:

Propositions for gas lighting, 1890.

Company.	Annual contract.	Five-year contract.	Ten-year contract.
Washington Gaslight Co. (6 cubic feet per hour):			
2,600 hours per year.....	\$20 per lamp per year.	\$19.50 per lamp per year	\$19 per lamp per year.
3,000 hours per year.....	\$22 per lamp per year.*	\$21.50 per lamp per year	\$21 per lamp per year.
Georgetown Gaslight Co. (6 cubic feet per hour):			
2,600 hours per year.....	\$20 per lamp per year.	\$19.50 per lamp per year	\$19 per lamp per year.
3,000 hours per year.....	\$22 per lamp per year.*	\$22 per lamp per year.	\$22 per lamp per year.
American Gas Controller and Fixture Co. ("Arc Gas Light").	\$72.50 per lamp per annum first year.	\$47.50 per lamp per year for second year and all succeeding years, not less than three.	\$47.50 per lamp per year for second year and all succeeding years, not less than three.

* In separate communication.

Propositions for electric lighting, 1890.

United States Electric Lighting Co. (arc lamps, 2,000 nominal candle-power, sunset to sunrise, every night).	60 cents per lamp per night.	54 cents per lamp per night.	51 cents per lamp per per night.
Electric Heat and Power Co. of the United States—			
I. (Arc lamps, 2,000 nominal candle power, sunset to sunrise, every night.)	.....	45 cents per lamp per night.	45 cents per lamp per night.
II. (Incandescent lamps, 25 candle-power, 2,600 hours per year.)	.....	\$15 per lamp per year.	\$15 per lamp per year.

GAS LIGHTING.

A comparison of the above propositions for gas lighting with those submitted in 1889* shows little difference between the two, so far as regards prices for annual and for 5-year contracts. Both companies, however, submit this year the figures at which they are willing to undertake the maintenance of the street lamps for 3,000 hours per annum, instead of 2,600 hours, as at present. These figures deserve serious attention, because experience has fully demonstrated that so long as the number of hours of burning is restricted to a yearly total of 2,600, the gas-lighting service will fail to give satisfaction to the public. Complaint as to the shortness of the hours of lighting is general, both on the part of residents and of visitors.

Just how far Washington is behind other cities of the country in this matter, the following list will show:

* See Senate Mis. Doc. No. 6, Fifty-first Congress, first session.

TABLE 1.—Hours of gas lighting per annum, December, 1890.

Cities.	Population Eleventh Census.	Number of hours of lighting per lamp per year.
New York.....	1, 513, 501	4, 000
Chicago.....	1, 098, 576	3, 786. 2
Philadelphia.....	1, 044, 894	3, 880. 5
Brooklyn.....	804, 377	3, 900
St. Louis.....	460, 357	2, 800
Boston.....	446, 507	3, 828
Baltimore.....	434, 151	4, 000
San Francisco.....	297, 990	3, 454. 5
Cincinnati.....	296, 309	3, 819. 1
Cleveland.....	261, 546	3, 760
Buffalo.....	254, 457	3, 950
Milwaukee.....	204, 150	3, 815
Newark, N. J.....	181, 518	3, 300
Minneapolis.....	164, 738	2, 200
Jersey City.....	163, 987	3, 300
Louisville.....	161, 005	4, 000
Omaha.....	139, 526	4, 000
Rochester, N. Y.....	138, 327	4, 000
St. Paul.....	133, 156	3, 955
Kansas City, Mo.....	132, 416	2, 062
Providence.....	132, 043	3, 340
Indianapolis.....	107, 445	2, 500
Allegheny.....	104, 967	2, 400
Average of 23 cities, not including Washington.....	.....	3, 480. 5
Washington.....	229, 796	2, 600

It will be seen that Washington has only about 75 per cent of the average yearly number (3,480) of hours of lighting for the other twenty-three cities given in the list; in other words, that the annual period of gas lighting now prescribed must be increased by one-third, in order to place Washington on an equality in this respect with the other large cities of the country. I therefore urgently recommend that action be taken towards securing an extension of the number of hours of lighting to not less than 3,000 per annum.

The Washington and Georgetown Gas Light Companies are willing to furnish the gas, and perform the lighting service, as at present, under an annual contract, for 2,600 hours per annum, at the price now paid, or \$20 per lamp; and for 3,000 hours at \$22 per lamp.

The proposed increase in cost for the 3,000 hours' service under an annual contract, is not proportionate to the gain to the public, as may be seen from the following proportion:

$$2,600 \text{ hours} : 3,000 \text{ hours} :: \$20.00 : \$23.08.$$

In other words, both gas companies, under an annual contract, are willing to make a reduction of \$1.08 from the price for 3,000 hours of lighting per year, as computed directly from the cost of the existing 2,600-hour service.

Under a 5-year contract the Washington Gas Light Company will light the lamps 2,600 hours for \$19.50 per lamp per year, and \$21.50 for 3,000 hours. For a 10-year contract the corresponding figures are \$19 for each lamp burning 2,600 hours, and \$21 for each lamp burning 3,000 hours.

The Georgetown Gas Light Company is willing to undertake a 5-year contract for the 2,600-hour service at \$22 per lamp per year; under a 10-year contract this company will furnish 2,600 hours of lighting at \$19 per lamp per year, and 3,000 hours at \$22 per lamp per year.

In order to compare the prices submitted for 3,000 hours of lighting, it is assumed for the present that the price now paid, namely, \$20 for 2,600 hours, is a fair one.

For 3,000 hours of lighting per year the prices bid by the Washington Gas Light Company, namely, \$22 per lamp for an annual contract, \$21.50 for a five-year contract; and \$21 for a ten-year contract, appear to me to be reasonable, but I can not say the same of the terms submitted by the Georgetown Gas Light Company for 3,000 hours lighting under 5 and 10-year contracts, as they do not follow logically from the corresponding figures for 2,600 hours. These conclusions are based upon the following proportions:

$$2,600 : 3,000 :: 20.00 : 23.08$$

$$2,600 : 3,000 :: 19.50 : 22.50$$

$$2,600 : 3,000 :: 19.00 : 21.92$$

The last terms of the above proportions represent the prices for 3,000 hours, computed directly from the figures presented by both companies for 2,600 hours.

A comparison of the two sets of bids may be made by subtracting from these computed prices the actual bids for 3,000 hours, as follows:

Washington Gaslight Company.

One year.	Five years.	Ten years.
\$23.08 22.00	\$22.50 21.50	\$21.92 21.00
1.08	1.00	.92

Georgetown Gaslight Company.

\$23.08 22.00	\$22.50 22.00	\$21.92 22.00
1.08	.50	— .08

From the above it will be seen that in bidding upon 3,000 hours of lighting for each term of contract, the Washington Gaslight Company makes an average reduction of \$1 per lamp per annum from the figures computed directly from the prices bid for 2,600 hours.

Under like conditions, however, the Georgetown Gaslight Company, while proposing a reduction from the computed price, of \$1.08 per lamp for 3,000 hours under an annual contract, diminishes this reduction to 50 cents per lamp for a 5-year contract, and for 10 years increases the bid to 8 cents above the computed price.

In the present condition of the art of street lighting I believe that 10 years is too long a time to enter into a contract for any kind of light.

Considering, however, that by an increased expenditure of \$1.50 per lamp per year, or 7½ per cent of what is now paid under annual contracts, the service can be extended to 3,000 hours, a period between 15 and 16 per cent longer than at present, I believe it would be advantageous to enter into a 5-year contract with the gas companies to light the lamps 3,000 hours per annum at a cost of \$21.50 per lamp, unless the same favorable rate can be secured for a shorter period.

It should be distinctly understood that the Washington Gaslight

Company bases its proposition concerning a 10-year contract upon the condition that the District will enter into an agreement with that company for not less than 5,000 lamps per annum. By the end of the current fiscal year this company will have in service about that number of lamps.

The existing rate of \$20 per lamp per annum for 2,600 hours of lighting under an annual contract, is the basis upon which rest all the other prices submitted for gas lighting. It therefore becomes important to compare this price with the charges obtaining in other cities, in order to determine whether it is or is not reasonable.

The following table gives the comparison for 23 cities, which by the Eleventh Census were shown to have a population of 100,000 or more. This table has been compiled with great care from data obtained by actual correspondence. No reply concerning gas lighting was received from New Orleans, while it appears that in Pittsburgh, Detroit, and Denver the streets are not lighted by gas.

TABLE 2.—*Cost of street lighting by gas, December, 1890.*

Cities.	Public gas lamps in service.	Gas burned per lamp per hour.	Hours burned per lamp per year.	Gas burned per lamp per year.	Cost per lamp per year including service and minor repairs.	Cost per lamp per hour including service and minor repairs.	Cost per 1000 cubic feet of gas including service and minor repairs.
		<i>Cu. ft.</i>		<i>Cubic feet.</i>			
New York	27,114	3	4,000	12,000	\$18.41	\$.00460	\$1.53
Chicago	35,326	4	3,786 ² / ₁₀	15,144 ⁸ / ₁₀	20.00	.00528	1.32
Philadelphia	19,288	5	3,880 ¹ / ₂	19,402 ¹ / ₂	22.25	.00573	1.15
Brooklyn	10,552	3	3,900	11,700	21.93	.00562	1.87
St. Louis	691	5	2,800	14,000	37.00	.01321	2.64
Boston	9,247	4	3,828	15,312	33.99 ¹ / ₅	.00888	2.22
Baltimore	5,274	5	4,000	20,000	33.00	.00825	1.65
San Francisco	5,350	5	3,454 ¹ / ₂	17,272.5	39.48	.01143	2.29
Cincinnati	8,551	4	3,819 ¹ / ₁₀	15,276 ⁴ / ₁₀	20.53	.00538	1.34
Cleveland	4,994	4 ¹ / ₂	3,760	16,920	18.54	.00493	1.10
Buffalo	4,500	4	3,950	15,800	21.00	.00532	1.33
Milwaukee	2,200	Av. 5 ¹ / ₁₁	3,815	Av. 19,422	Av. 24.48	.00642	1.26
Newark, N. J.	3,383	4	3,300	13,200	21.75	.00659	1.65
Minneapolis	3,013	6	2,200	13,200	15.63	.00710	1.18
Jersey City	2,486	3	3,300	9,900	20.63	.00625	2.06
Louisville	3,454	5	4,000	20,000	20.00	.00500	1.00
Omaha	439	5	4,000	20,000	25.00	.00625	1.25
Rochester, N. Y.	810	4	4,000	16,000	18.25	.00456	1.14
St. Paul	3,145	6	3,955	23,730	35.06	.00886	1.48
Kansas City, Mo.	1,604	5	2,062	10,310	20.00	.00970	1.94
Providence	2,088	5	3,340	16,700	30.00	.00888	1.80
Indianapolis	2,364	4	2,500	10,000	15.00	.00600	1.50
Allegheny	600	6	2,400	14,400	11.00	.00458	0.76
Average of 23 cities, not including Washington .	6,803.2	4.55	3,480.5	15,638.7	23.61	.00691	1.543
Washington, annual contract*		6	2,600	15,600	20.00	.00769	1.28
Do		6	3,000	18,000	22.00	.00733	1.22
Washington, 5-year contract		6	3,000	18,000	21.50	.00717	1.19

* On January 1, 1891, there were 5,317 public gas lamps in Washington, not including 312 maintained by the United States.

It will be observed from the above table that in Washington the consumption of gas per lamp per hour is about one-third greater, and the annual period of lighting per lamp about one-fourth less than the average; while the prices submitted for 2,600 and 3,000 hours of lighting, under either an annual or a 5 year contract, and the prices per thousand cubic feet of gas, including service of lamp and minor repairs, are considerably less than the average. The average price paid per thousand cubic feet of gas burned, including service of lamp and minor re-

pairs, is \$1.54. The corresponding price now paid in Washington is \$1.28, or 82 per cent. of the average; the price proposed by the Washington Gas Light Company for a 5-year contract, lighting 3,000 hours per annum, is at the rate of \$1.19 per thousand cubic feet, or only 77 per cent. of the average. It also appears, that without regard to the hourly consumption of gas, the average cost of maintaining the public gas lamps is a little under 7 mills per hour. This is slightly lower than the corresponding figures for Washington, but computing the average cost per lamp per hour according to the hourly consumption of gas, this average would be increased to about 9 mills per hour, as follows :

$$4.55 : 6 :: .00691 : .00911$$

It therefore appears that in this respect also, the existing and proposed figures for Washington are favorable to the municipality.

HIGH-POWER GAS LAMPS.

A proposition was received from the American Gas Controller and Fixture Company, of Springfield, Mass., to light the streets with the "arc gas light" at \$72.50 per lamp for the first year, and \$47.50 for the second year, and all succeeding years, not less than three. Due, however, to the proposed increase in the number of hours of lighting, from 2,600 to 3,000 per annum, there has been submitted a second proposition, a copy of which will be found in the appendix.

The agent of this company suggests that this light can be advantageously substituted for the electric arc light, or the ordinary gas street lamp. These claims are very broad, as the two kinds of lighting proposed to be superseded are totally distinct in character. The Commissioners have authorized a test to be made of this lamp at the risk and expense of the company, and it is now in service on Connecticut avenue, between K street and Dupont Circle. The light is quite soft and agreeable, and its increased illuminating power over that of the ordinary street gas lamp is very noticeable, but the time during which it has been under my observation is too limited to justify any present decision for or against its adoption.

Within the past few days there have also been on exhibition on New Hampshire avenue near Dupont Circle, some of the "Gordon" high-power gas lamps, belonging to the Siemens-Lungren Gas Lamp Company, of Baltimore.

ELECTRIC LIGHTING.

Two letters were received; one from the present contractor, the United States Electric Lighting Company, and one from the Electric Heat and Power Company of the United States. The former does not contemplate any reduction from the present contract price of arc lights under an annual contract, but suggests that under a 5-year contract the present rate might be lowered 10 per cent. and under a 10-year contract 15 per cent. The price now paid is 60 cents per lamp per night, or \$219 per year, and the prices suggested for 5-year and 10-year contracts are respectively 54 and 51 cents per lamp per night, or \$197.10 and \$186.15 per annum.

The Electric Heat and Power Company of the United States does not consider an annual contract, but proposes to enter into a 5 year or a 10-year contract for arc lights of 2,000 nominal candle power at 45 cents per lamp per night, or \$164.25 per annum, each lamp to burn every

night from sunset to sunrise; and for 25-candle power incandescent lamps (2,600 hours each) at \$15 per lamp per year.

It is difficult to arrive at any proper basis upon which to compare prices. Both the companies in question contemplate the entire use of underground wires so far as concerns their public lighting service, but the second company named has at this time no plant in existence in the District of Columbia. Thus far Washington appears to be the only city in the United States in which all the public arc lamps are maintained wholly by means of underground wires.

In New York City the prices paid during 1890 for nominal 2,000 candle-power arc lights burning all of every night, averaged 32.5 cents per lamp per night, where overhead wires were used, and 46.1 cents for underground circuits. The only lamps operated entirely by underground wires were 69 at 45 cents per lamp per night, and 19 at 50 cents per lamp per night. The average for all public arc lights was 33.9 cents per lamp per night. New contracts have recently been awarded in New York City, at an average price for all public arc lamps, whether operated by underground or overhead wires, of 40.4 cents per lamp per night. The lamps to be operated by underground wires are, respectively, 228 at 40 cents per lamp per night, 69 at 45 cents per lamp per night, and 19 at 50 cents per lamp per night; a total of 316 lamps at an average price of 41.7 cents per lamp per night.

In order to obtain as late and accurate data as possible, I have mailed about 600 circulars, asking for information concerning the public arc lighting in cities and villages of the United States. To these letters nearly 500 replies have been received, from which two tables have been compiled, relating to arc lights of 2,000 nominal candle-power. Table 3, referring only to cities shown by the Eleventh Census to have a population of not less than 100,000, is given below. Table 4, embracing the data for all places from which answers were received, will be found in the appendix.

From San Francisco no reply was received, while Minneapolis and St. Paul do not appear in Table 3, as in these cities the lamps are not operated all of every night.

TABLE 3.—*Arc lamps of 2,000 nominal candle-power, burning all of every night. December, 1890.*

Cities.	Arc lamps (contract).	Contract price per lamp per year.	Period of illumination.	Length of contract.	Location of wires.
New York	883	*\$123.73	Sunset to sunrise every night.	Annual	Mostly overhead, a few underground.
Chicago.....	112	175.00	Dusk to daylight every night.	.....	Overhead.
Philadelphia.....	1,293	*174.29	Sunset to sunrise every night.	Annual	Overhead and underground.
Brooklyn	1,528	182.50	30 minutes after sundown to 30 minutes before sunrise every night.	...do	Overhead.
St. Louis	1,822	74.95	30 minutes after sundown to 45 minutes before sunrise every night.	10 years ...	Do.
Boston.....	1,125	146.00	Sunset to sunrise every night.	.....	Do.
Baltimore.....	655	127.75	Sunset to break of day every night.	5 years	Do.
Cincinnati.....	27	144.00	All of every night.....	Monthly...	Do.
Cleveland.....	105	139.12	...do.....	Annual	Do.
Buffalo	1,455	146.00	...do.....	...do	Overhead and underground.
New Orleans.....	1,013	*134.76	Sunset to sunrise every night.	5 years ...	Overhead.

*Average.

TABLE 3.—Arc lamps 2,000 nominal candle power, etc.—Continued.

Cities.	Arc lamps (contract.).	Contract price per lamp per year.	Period of illumination.	Length of contract.	Location of wires.
Pittsburgh	920	\$100.00	Dusk to daylight every night.	3 years.....	Overhead.
Detroit	827	140.05	30 minutes after sunset to 30 minutes before sunrise every night.	...do	$\frac{1}{2}$ mile circle underground, rest overhead.
Milwaukee	417	112.50	Sunset to sunrise every night.	1 year.....	Overhead and underground.
Newark, N. J.	420	146.00	All of every night.....	5 years.....	Overhead.
Jersey City.....	87	85.82	Sunset to sunrise every night.	Annual....	Do.
Louisville	6	127.75	All of every night.....	...do	Do.
Omaha	117	175.00	...do	5 years.....	Do.
Rochester	1,142	102.20	Sunset to sunrise every night.	2 to 5 years.	Do.
Kansas City, Mo.....	125	200.75	All of every night. ....	.....	Do.
Providence	650	160.60	30 minutes after sundown to 30 minutes before sunrise.	5 years.....	Do.
Indianapolis.....	112	*62.25	All of every night.....	Annual....	Do.
Denver	221	*198.90	...do	5 years.....	Do.
Allegheny	16	180.00	Dusk to daylight every night.	Annual....	Do.
Average of 24 cities, not including Washington.	628.3	140.00			
Washington	206	219.00	Sunset to sunrise every night.	Annual....	All underground.

* Average.

From Table 3 it appears that, for the 24 cities named, the average contract price for arc lights of 2,000 nominal candle-power, burning all of every night, is \$140 per year, or 38.4 cents per lamp per night.

It will be observed that the corresponding prices now paid in Washington are about 56 per cent higher than the average as given above.

In Rochester, N. Y., some of the arc lamps are operated by water-power. Omitting that city, the average for the 23 others is \$141.64 per lamp per annum, or 38.8 cents per lamp per night.

From Table 3 it is also to be noticed that the number of public arc lamps in Washington is only about one-third of the average for the 24 cities named, a fact which may be considered as having a possible bearing upon the price which should be paid. It must be remembered, however, that in some of the cities named the public arc lighting is shared by two or more companies, there being now five different contracting companies in New York City.

The average price per lamp per year, burning all of every night, for all places (148 in number) from which reports were received, is \$121.79, or 33.4 cents per lamp per night. The corresponding prices for Washington exceed this average by nearly 80 per cent.

I have also computed the average price per lamp per year, burning all of every night, from a more extended list, including the places from which reports have been received, and, in addition, all the available data from "Whipple's National Electrical Directory, 1890," a work which appears to be very reliable. This resulting average is \$124.85 per lamp per year, or 34.2 cents per lamp per night. The price now paid in Washington exceeds this average by about 75 per cent.

As Table 3 deals only with data from cities having a population of more than 100,000 each, I believe the average price deduced from that table to be a fairly good indication of what should be paid for arc lamps of 2,000 nominal candle-power, operated by overhead wires, and burning

all of every night. The averages computed from the data contained in the general list of large and small cities and towns all over the country I believe to be of comparatively little value, owing to the great dissimilarity of the conditions controlling the cost.

Last year Maj. Charles W. Raymond, Corps of Engineers, then Engineer Commissioner, in reporting upon this subject, made a careful computation from actual and assumed data, of the probable cost of operating the arc lamps in Washington by means of underground wires, and arrived at the conclusion that "the existing price of 60 cents per arc lamp per night leaves little or no margin for surplus or profits."

The final paragraph of his report is as follows:

Throughout this investigation I have assumed that the Government is to pay a fair price for its electric-lighting service, like any private concern. It is to be remembered, however, that the Electric Lighting Company enjoys valuable privileges, occupying the public streets with its conduits, and monopolizing the profitable business of private electric lighting in the cities of Washington and Georgetown, and for these privileges it makes no payment whatever. I know of but one way to determine the value of such privileges, and that is by competition. If the District government were authorized to contract for the public lighting with one or more responsible companies, after due advertisement, the successful bidders to have the privileges of private lighting, I have no doubt the expenses of the municipal service could be greatly reduced.

Since Major Raymond's report was written the United States Electric Lighting Company has greatly extended its conduits, which now occupy a large portion of the most valuable part of the city for electric-lighting, public, residence, and commercial. No payment is made for this privilege.

Keeping in view the great value of these franchises and the fact that there is an entire absence of the competition necessary to suitably regulate the price of arc lighting in Washington, I believe that that price should not, in fairness to the municipality, exceed the highest price paid in New York City, last year as well as this year, for lamps operated through underground wires; that is, 50 cents per lamp per night, or \$182.50 per lamp per annum.

As a number of the large cities are now taking definite action toward placing a greater or less proportion of the electric-lighting wires underground, more extensive and positive information will soon be available upon the question of the fair price to be paid for arc lighting through underground wires. For the present I do not believe it wise to make a contract for as long as either 5 or 10 years, but if the price to be paid does not exceed 50 cents per lamp per night, I believe it safe to enter into contract for not longer than 3 years, under the supposition that there will be a gradual increase in the number of public arc lamps in service.

Very respectfully, your obedient servant,

JAS. L. LUSK,
Captain of Engineers, U. S. A.

Lieut. Col. H. M. ROBERT,
Corps of Engineers, U. S. A.,
Engineer Commissioner, D. C.

Approved:

HENRY M. ROBERT,
Lieut. Col., Corps of Engineers, U. S. A.,
Engineer Commissioner, D. C.

APPENDIX.

TABLE 4.—*Data for arc lights of 2,000 nominal candle-power, December, 1890.*

[Contract prices are given, except where city owns plant.]

Locality.	Num-ber of lights.	Cost per light per year.	Period of illumination.	Term of contract.
Birmingham, Ala.....	105	\$108.00	All of every night.....	2 or more years.
Huntsville, Ala.....	4	108.00	Till 12 p. m.....	1 year.
Montgomery, Ala.....	100	155.13	All of every night.....	5 years.
Tusculumbia, Ala.....	9	125.00	do.....	3 years.
Little Rock, Ark. (city plant)...	112	53.50	All dark nights.....	
Pine Bluff, Ark.....	11	180.00	All of every night.....	Annual.
Texarkana, Ark.....	31	169.00	do.....	30 years.
Alameda, Cal.....	95	120.00	Moon to 1:30 a. m.....	
Fresno, Cal.....	18	144.00	Moon.....	Annual.
Los Angeles, Cal.....	288	144.00	Moon all night.....	2 years.
Oakland, Cal.....	133	146.00	To 1 a. m. every night.....	Annual.
San Diego, Cal.....	83	193.97	Moon.....	5 years.
Aspen, Colo.....	30	180.00	All of every night.....	2 years.
Colorado Springs, Colo.....	50	120.00	Moon.....	5 years.
Denver, Colo.....	175	194.40	All of every night.....	Do.
	46	216.00		
Fort Collins, Colo.....	15	130.00	To 12 p. m. every night.....	Annual.
Leadville, Colo.....	20	180.00	To 12 p. m.....	5 years.
Danbury, Conn.....	100	90.00	Moon to 2 a. m.....	3 years.
Hartford, Conn.....	124	120.00	All of every night.....	Do.
Meriden, Conn.....	130	115.00	Every night from dark to 3:30 a. m.	Do.
New Britain, Conn.....	90	95.00	Moon to 12:15 a. m.....	
Norwich, Conn.....	28	96.00	Every night till 12 p. m.....	Annual.
Waterbury, Conn.....	50	*.39	Moon all night.....	4 years.
Willimantic, Conn.....	61	90.00	Every night till 12 p. m.....	3 years.
Wilmington, Del.....	*33	161.25	All of every night.....	Do.
DeLand, Fla.....	8	75.00	Every night till 12 p. m. for half the year.	Annual.
Atlanta, Ga.....	193	120.00	All of every night.....	2 years.
Columbus, Ga.....	92	120.00	Moon all night.....	3 years.
Macon, Ga.....	75	120.00	Moon.....	Do.
Waycross, Ga.....	30	66.66	Moon all night.....	10 years.
Alton, Ill.....	41	90.00	Moon till 12 p. m.....	3 years.
Aurora, Ill. (city plant).....	116	66.69	All dark nights.....	
Belleville, Ill.....	100	90.00	Moon.....	Annual.
Belvidere, Ill.....	27	100.00	do.....	5 years.
Bloomington, Ill. (city plant)...	219	60.00	Moon all night.....	
Carlinville, Ill.....	27	80.00	Till 12 p. m. every night.....	5 years.
Charleston, Ill.....	44	90.00	All of every night.....	10 years.
Chicago, Ill. (725 operated by city. No price given.)	112	175.00	do.....	
Danville, Ill.....	80	80.00	As ordered.....	5 years.
Decatur, Ill. (city plant).....	65	46.15	All dark nights.....	
East St. Louis, Ill.....	{	60	{ All of every night.....	10 years.
		17		
Edwardsville, Ill.....	16	180.00	Philadelphia.....	5 years.
Elgin, Ill. (city plant).....	7	71.52	Moon.....	
Freeport, Ill.....	49	100.00	Philadelphia, 300 nights per year	5 years.
Galesburgh, Ill.....	{	33	95 Philadelphia to 12 p. m.....	{ 1 to 5 years.
		95	33 Philadelphia all night.....	
Jacksonville, Ill.....	71	96.00	Philadelphia.....	2 years.
Joliet, Ill.....	121	124.00	All of every night.....	Annual.
Moline, Ill. (city plant).....	100	75.00	Moon.....	
Mt. Vernon, Ill.....	20	110.00	Moon to 12 p. m.....	7 years.
Murphysborough, Ill.....	22	144.00	All of every night.....	20 years.
Peoria, Ill.....	233	145.00	Moon all night.....	5 years.

* Per light, per night.

TABLE 4.—Data for arc light of 2,000 nominal candle-power, etc.—Continued.

Locality.	Num- ber of lights.	Cost per light per year.	Period of illumination.	Term of contract.
Quincy, Ill.	200	\$95.00	Moon all night.	Annual.
Rock Island, Ill.	115	78.00	do	3 years.
Roodhouse, Ill.	10	144.00	Moon	5 years.
Springfield, Ill.	130	137.00	Moon (Philadelphia)	10 years.
Streator, Ill.	60	96.00	All of every night	5 years.
Anderson, Ind.	22	54.55	Philadelphia	Annual.
Auburn, Ind.	13	90.00	Moon	5 years.
Bedford, Ind.	19	75.00	Till 12 p. m.	Do.
Bloomington, Ind.	16	66.00	do	10 years.
Columbia City, Ind.	33	75.00	Moon till 12 p. m.	5 years.
Fort Wayne, Ind.	152	150.00	Moon	3 years.
Greencastle, Ind.	15	70.00	Moon all night	Do.
Indianapolis, Ind.	{ 100	60.00	{ All of every night	
	{ 12	81.00		
Jeffersonville, Ind.	{ 50	85.00	{ Till 1 a. m. every night	10 years.
	{ 10	80.00		
Kokomo, Ind.	56	100.00	All of every night	3 years.
Logansport, Ind.	85	100.00	Philadelphia	Annual.
La Porte, Ind.	45	70.50	do	5 years.
North Manchester, Ind.	15	71.66	Moon all night	Do.
Plymouth, Ind.	25	80.00	Moon to 12 p. m.	3 years.
South Bend, Ind.	132	{ 70.00	To 12 p. m. every night	{ 5 years.
		{ 100.00	All of every night	
Sullivan, Ind.	30	81.00	Moon all night	Do.
Terre Haute, Ind.	244	70.00	Moon	3 years.
Union City, Ind.	27	91.25	Moon (Philadelphia)	5 years.
Valparaiso, Ind.	32	68.00	Moon till 12 p. m.	Do.
Vincennes, Ind.	5	96.00	To 12 p. m. every night	10 years.
Carroll, Iowa	7	96.00	Moon till 12 p. m.	5 years.
Cedar Falls, Iowa	11	100.00	To 3:30 a. m. every night	Do.
Cedar Rapids, Iowa	31	115.00	Moon	Annual.
Clinton, Iowa	45	120.00	Moon all night	10 years.
Des Moines, Iowa	38	141.00	Moon	5 years.
Dubuque, Iowa	100	75.00	All dark hours	1 to 3 years.
Grinnell, Iowa	20	96.00	Moon	Annual.
Keokuk, Iowa	125	60.00	Philadelphia	5 years.
Mason City, Iowa	23	60.00	Moon to 12 p. m.	2 or more years.
Muscataine, Iowa	17	126.00	Moon till 11:30 p. m.	10 years.
Ottumwa, Iowa	70	44.00	All of every night	5 years.
Sioux City, Iowa	100	100.00	do	4 years.
Arkansas City, Kans.	35	72.00	To 12 p. m. every night	
Chanute, Kans.	7	102.87	To 12 p. m.	
Fort Scott, Kans.	75	80.00	Moon to 1 a. m.	2 years.
Hiawatha, Kans.	9	120.00	To 12 p. m. every night	5 years.
Kingman, Kans.	10	50.00	Moon to 12 p. m.	Do.
Lawrence, Kans.	17	96.00	To 12 p. m. every night	1 year.
Leavenworth, Kans.	15	120.00	All of every night	Optional.
Lyons, Kans.	17	108.00	To 12 p. m. every night	Annual.
Manhattan, Kans.	9	87.50	Moon to 12 p. m.	Do.
McPherson, Kans.	18	75.00	do	Do.
Newton, Kans.	11	100.00	To 12 p. m. every night	Annual.
Ottawa, Kans.	14	90.00	Moon all night	3 years.
Parsons, Kans.	14	168.00	All of every night	
Pittsburgh, Kans.	{ 30	96.00	{ Philadelphia	21 years.
	{ 1	90.60		
Topeka, Kans. (city plant)	184	84.00	All dark nights	
Winfield, Kans.	28	120.00	Moon to 12 p. m.	3 years.
Louisville, Ky.	6	127.75	All of every night	Annual.
Owensborough, Ky.	32	110.00	Moon to 1 a. m.	10 years.
Paducah, Ky.	2	120.00	To 12 p. m. every night	Annual.
Baton Rouge, La.	36	83.00	Moon all night	3 years.
New Orleans, La.	1,013	*124.76	All of every night	5 years.
Shreveport, La.	34	121.66	Moon all night	4 years.
Augusta, Me.	68	76.33	9 all of every night; 59 to 12 p. m.	5 years.
Bangor, Me. (city plant)	148	42.50	All of every night	
Bath, Me.	{ 26	100.00	Till 12 p. m. every night	{ 5 years.
	{ 5	150.00	All of every night	
Lewiston, Me. (city plant)	100	42.00	Moon	
Baltimore, Md.	655	127.75	All of every night	5 years.
Hagerstown, Md.	60	80.33	do	5 years.
Beverly, Mass.	19	182.50	do	
Boston, Mass.	1,125	146.00	do	
Brocton, Mass.	25	142.00	To 1 a. m. all dark nights	3 years.
Cambridge, Mass.	116	180.00	All of every night	Do.
Fall River, Mass.	125	171.55	do	
Haverhill, Mass.	81	*.45	Moon all night	Annual.
Lawrence, Mass.	80	100.00	Every night from dark to 12 p. m. and from 5:30 a. m. to daylight.	
Lowell, Mass.	{ 200	146.00	{ All of every night	3 years.
	{ 2	136.37		

*Average.

12 GAS AND ELECTRIC LIGHTING IN DISTRICT OF COLUMBIA.

TABLE 4.—Data for arc lights of 2,000 nominal candle-power, etc.—Continued.

Locality.	Num- ber of lights.	Cost per light per year.	Period of illumination.	Term of contract.
Lynn, Mass	165	\$164.25	All of every night	3 years.
Marlborough, Mass	40	125.00	To 1 a. m. every night	Annual.
New Bedford, Mass	93	146.00	Moon all night	Do.
Peabody, Mass	2	182.50	All of every night	Temporary
Salem, Mass	191	161.25	do	3 years.
Somerville, Mass	151	109.50	To 1 a. m. every night	Do.
Westfield, Mass	52	84.09	do	Annual.
Worcester, Mass	281	146.00	All of every night	3 years.
Adrian, Mich	88	96.45	do	Do.
Alpena, Mich	28	75.00	Moon to 1 a. m.	5 years.
Ann Arbor, Mich	75	81.00	Moon all night	
Bay City, Mich. (city plant)	136	58.00	do	
Big Rapids, Mich	26	105.00	To 12 p. m. every night	Annual.
Coldwater, Mich	62	91.25	Moon to 1 a. m.	Do.
Detroit, Mich	827	140.05	All of every night	3 years.
Eaton Rapids, Mich	17	80.00	Moon to 12 p. m.	Do.
Grand Rapids, Mich	120	109.50	All of every night	Annual.
Ionia, Mich	{ 42	85.00	Moon to 12 p. m.	{ 5 years.
	{ 8	140.00	All of every night	
Jackson, Mich	212	87.60	do	Annual.
Kalamazoo, Mich	{ 30	*.50	Moon all night	{ 3 years.
	{ 90	*.33	Moon to 12 p. m. every night	
Lansing, Mich	100	100.00	Moon all night	1 year.
Mason, Mich	37	78.00	Moon	3 years.
Port Huron, Mich	67	100.00	Moon (Philadelphia)	Do.
Saginaw, Mich	220	140.00	All of every night	2 years.
West Bay City, Mich	57	90.00	Moon all night	Annual.
Vassar, Mich	11	96.36	Moon till 12 p. m. every night	5 years.
Duluth, Minn	202	124.67	All of every night	6 years.
Minneapolis, Minn	475	150.00	Moon (Philadelphia)	5 years.
St. Paul, Minn	37	127.75	To 12 p. m. every night	
St. Cloud, Minn	24	125.00	All of every night	Annual.
Winona, Minn	69	125.00	All dark nights	5 years.
Greenville, Miss	{ 40	120.00	{ Moon	3 years.
	{ 5	100.00		
Helena, Mont	58	198.00	Moon all night	Annual.
Boonville, Mo	22	120.00	Moon	10 years.
Carrollton, Mo	11	108.00	To 12 p. m. every night	Monthly.
Chillicothe, Mo	20	150.00	All of every night	
Independence, Mo	20	90.00	To 12 p. m. every night, and from 5 a. m. to daylight.	6 months.
Kansas City, Mo	128	200.75	All of every night	
Kirksville, Mo	8	80.00	To 12:30 a. m.	Monthly.
Mexico, Mo	11	114.55	Moon (Philadelphia)	Annual.
Moberly, Mo	9	99.00	Moon	Do.
Sedalia, Mo	92	87.00	do	5 years.
Springfield, Mo	54	136.00	Moon all night	Do
St. Joseph, Mo. (city plant)	250	60.00	Moon	
St. Louis, Mo	1,822	74.95	All of every night	10 years.
Ashland, Nebr	12	120.00	To 12 p. m. every night	5 years.
Beatrice, Nebr	12	180.00	All of every night	Annual.
Hastings, Nebr	10	120.00	Moon to 12 p. m.	Do.
Lincoln, Nebr	{ 16	160.00	All of every night	{ 5 years.
	{ 48	120.00	Till 12 p. m. every night	
McCook, Nebr	8	120.00	To 1 a. m. every night	Do.
Nebraska City, Nebr	5	120.00	To 12 p. m. every night	Do.
Norfolk, Nebr	6	120.00	do	Annual.
Omaha, Nebr	117	175.00	All of every night	5 years.
Red Cloud, Nebr	16	90.00	do	Annual.
South Omaha, Nebr	16	168.00	All of every night	5 years.
Concord, N. H.	50	100.00	Every night, average 6 hours per night.	3 years.
Keene, N. H.	35	100.00	To 11:30 p. m. every night	Do.
Nashua, N. H.	160	84.00	To 12 p. m. every night	4 years.
Tilton, N. H.	13	75.00	do	Annual.
Asbury Park, N. J.	40	100.00	do	1 year.
Atlantic City, N. J.	77	91.25	All of every night	1 year.
Camden, N. J.	243	146.00	do	Annual.
Elizabeth, N. J.	20	125.00	do	2 years.
Hoboken, N. J.	148	146.00	do	5 years.
Jersey City, N. J.	87	85.82	do	Annual.
Newark, N. J.	420	146.00	do	5 years.
Passaic City, N. J.	27	114.00	do	3 years.
Paterson, N. J.	269	110.00	do	5 years.
Trenton, N. J.	178	138.70	do	3 years.
Albany, N. Y.	569	114.17	do	5 years.
Albion, N. Y.	43	55.00	Moon to 1 a. m.	Do.
Batavia, N. Y.	{ 64	{ 54.81	Moon to 12 p. m.	{ 3 years.
		{ 84.45	All of every night	

* Per night.

TABLE 4.—Data for arc lights of 2,000 nominal candle-power, etc.—Continued.

Locality.	Number of lights.	Cost per light per year.	Period of illumination.	Term of contract.
Binghamton, N. Y.	158	\$131.40	All of every night	Annual.
Brooklyn, N. Y.	1,528	182.50	do	Annual.
Buffalo, N. Y.	1,455	146.00	do	1 year.
Canandaigua, N. Y.	70	69.00	Moon to 12 p. m.	3 years.
Canastota, N. Y.	47	72.00	do	5 years.
Clayton, N. Y.	15	75.00	do	3 years.
Cohoes, N. Y.	112	100.00	All of every night	Annual.
Elbridge, N. Y.	8	50.00	Moon all night	1 year.
Elmira, N. Y.	57	106.85	All of every night	4 years.
Geneva, N. Y.	68	79.80	Moon to 12 p. m.	5 years.
Glens Falls, N. Y.	78	70.00	All of every night	3 years.
Gouverneur, N. Y.	30	50.00	Moon to 12 p. m.	Do.
Hornellsville, N. Y.	70	100.00	All of every night	Do.
Ithaca, N. Y.	78	*.24	Moon to 12 p. m., 20 nights per month.	5 years.
Johnstown, N. Y.	56	75.00	Moon to 12 p. m., and 1 a. m.	Annual.
Jordan, N. Y.	16	51.50	Moon	Do.
Lockport, N. Y.	38	80.00	do	1 to 3 years.
Mexico, N. Y.	20	50.00	Moon to 12 p. m.	5 years.
Newark, N. Y.	48	60.00	Moon to 1 a. m.	Do.
New York, N. Y.	883	†123.73	All of every night	Annual.
Olean, N. Y.	40	100.00	do	5 years.
Oneonta, N. Y.	32	127.75	do	Annual.
Oswego, N. Y.	174	100.00	do	5 years.
Poughkeepsie, N. Y.	219	113.00	do	1 year.
Richfield Springs, N. Y.	22	80.00	Moon, June to October, to 2 a. m.; October to June, to 12 p. m.	Annual.
Rochester, N. Y.	1,142	102.20	All of every night	2 to 5 years.
Rome, N. Y.	147	110.00	Moon all night	5 years.
Sandy Hill, N. Y.	38	81.00	All dark nights	Annual.
Saratoga Springs, N. Y.	94	73.19	All of every night	1 year.
Schenectady, N. Y.	110	136.87	do	3 years.
Syracuse, N. Y.	304	144.00	do	Do.
Troy, N. Y.	282	144.17	do	5 years.
Utica, N. Y.	400	127.75	do	3 years.
Watertown, N. Y.	104	63.00	Moon to 12 p. m.	7 years.
Waverly, N. Y.	25	70.00	Moon all night	5 years.
West Troy, N. Y. (city plant)	90	77.00	All of every night	
Yonkers, N. Y.	88	99.50	do	5 years.
Hickory, N. C.	9	96.00	Moon to 12 p. m.	Annual.
Fargo, N. Dak.	22	240.00	All of every night	5 years.
Akron, Ohio	202	84.00	Monthly schedule	3 years.
Bellaire, Ohio	52	90.00	Moon all night	2 to 5 years.
Bryan, Ohio	40	75.00	All dark hours	2 years
Canton, Ohio	{ 45	100.00	All of every night	{ 2 years.
	{ 66	70.00	Moon	
Cincinnati, Ohio	{ 12	140.64	To 12 p. m.	{ Monthly.
	{ 27	144.00	All of every night	
Cleveland, Ohio	105	139.12	All of every night	Annual.
Columbus, Ohio	800	80.00	Philadelphia	
Coshocton, Ohio	47	77.36	Every night to 1 a. m.	5 years.
Dayton, Ohio	150	125.00	All of every night	Annual.
East Liverpool, Ohio	{ 48	90.00	do	{ 3 years.
	{ 4	100.00	do	
Findlay, Ohio	126	60.00	do	5 years.
Fostoria, Ohio	42	75.00	To 12 p. m. every night	
Fremont, Ohio	70	90.00	All of every night	5 years.
Hillsborough, Ohio	63	70.00	Moon all night	Do.
Lima, Ohio	126	88.00	Philadelphia	3 years.
Mansfield, Ohio	107	95.00	Moon all night	Do.
Massillon, Ohio	93	70.00	Moon to 2 a. m.	5 years.
Minerva, Ohio	13	50.00	Moon to 12 p. m.	3 years.
Mt. Vernon, Ohio	90	72.00	All of every night	5 years.
Napoleon, Ohio	17	125.00	Moon all night	3 years.
Newark, Ohio	23	40.00	Moon to 12 p. m.	5 years.
New Lisbon, Ohio	28	80.00	To 12 p. m., and 5:30 a. m. to daylight.	2 years.
New Philadelphia, Ohio	{ 30	72.00	{ Moon to 1 a. m.	{ 5 years.
	{ 39	70.00		
Norwalk, Ohio	84	70.00	To 12 p. m. every night	Do.
Piqua, Ohio	9	100.00	All of every night	Do.
Pomeroy, Ohio	24	96.00	Moon all night	Do.
Ravenna, Ohio	50	75.00	do	3 years.
Sandusky, Ohio	135	100.00	do	Do.
Springfield, Ohio	149	100.00	All of every night	5 years.
Stenbenville, Ohio	135	75.00	do	Do.
Tiffin, Ohio	119	88.00	do	Do.

* Per night of lighting.

† Average.

14 GAS AND ELECTRIC LIGHTING IN DISTRICT OF COLUMBIA.

TABLE 4.—Data for arc lights of 2,000 nominal candle-power, etc.—Continued.

Locality.	Num- ber of lights.	Cost per light per year.	Period of illumination.	Term of contract.
Toledo, Ohio.....	510	\$100. 00	All of every night.....	5 years.
Wellsville, Ohio.....	41	95. 00	do.....	3 years.
Wooster, Ohio.....	69	70. 00	Moon (Philadelphia).....	10 years.
Youngstown, Ohio.....	187	70. 00	Moon.....	Annual, with op tion of 5 years.
Zanesville, Ohio.....	155	88. 00	Every night to 12 p. m., and from 12 p. m. to daylight on dark nights.	1 year.
Guthrie, Okla.....	20	120. 00	Moon to 1 a. m.....	Temporary.
Dallas, Oreg.....	17	168. 00	All of every night.....	
Portland, Oreg.....	53	{ 180. 00 120. 00	{ do.....	2 years.
Allegheny, Pa. (also city plant, no data given).	16	180. 00	do.....	Annual.
Allentown, Pa.....	98	100. 00	All dark nights.....	5 years.
Altoona, Pa.....	141	79. 50	All of every night.....	3 years.
Bedford, Pa.....	25	60. 00	To 12 p. m. every night.....	Annual.
Carbondale, Pa.....	32	85. 00	All of every night.....	3 years.
Danville, Pa.....	34	84. 00	do.....	Annual.
Du Bois, Pa.....	15	66. 33	do.....	5 years.
Erie, Pa.....	152	120. 45	do.....	Annual.
Harrisburg, Pa.....	250	90. 00	do.....	do
Hazleton, Pa.....	21	100. 00	do.....	2 years.
Huntingdon, Pa.....	40	60. 00	To 12 p. m. every night.....	3 years.
Lancaster, Pa.....	145	124. 10	All of every night.....	Do
Lebanon, Pa.....	60	80. 00	To 12 p. m. every night.....	Annual.
Mahanoy City, Pa.....	25	108. 00	All of every night.....	Do
McKeesport, Pa.....	52	100. 00	Moon all night.....	5 years.
Media, Pa.....	19	84. 00	do.....	Annual.
Nanticoke, Pa.....	13	120. 00	All of every night.....	Do
New Castle, Pa.....	50	80. 00	do.....	5 years.
Philadelphia, Pa.....	1, 293	174. 29	do.....	Annual.
Pittsburgh, Pa.....	920	100. 00	do.....	3 years.
Plymouth, Pa.....	48	84. 37	do.....	10 years.
Pottstown, Pa.....	15	125. 00	do.....	3 years.
Pottsville, Pa.....	60	96. 00	do.....	Annual.
Reading, Pa.....	196	120. 00	Moon, all night.....	Do.
Scottdale, Pa.....	12	85. 00	All of every night.....	5 years.
Scranton, Pa.....	325	90. 00	do.....	3 years.
Shenandoah, Pa.....	34	108. 00	do.....	2 years.
South Bethlehem, Pa.....	55	81. 82	Moon to 12 p. m.....	5 years.
Susquehanna, Pa.....	12	100. 00	All of every night.....	3 years.
Uniontown, Pa.....	56	70. 00	do.....	Do
Wilkes Barre, Pa.....	50	135. 00	do.....	1 year.
Williamsport, Pa.....	170	80. 00	do.....	
York, Pa.....	190	91. 25	do.....	Annual.
Newport, R. I.....	75	156. 00	Moon all night.....	3 years.
Pawtucket, R. I.....	49	140. 00	do.....	Do.
Providence, R. I.....	650	160. 60	All of every night.....	5 years.
Woonsocket, R. I.....	89	182. 50	do.....	Do.
Greenville, S. C.....	46	100. 00	Moon.....	25 years.
Sumter, S. C.....	35	100. 00	Moon all night.....	10 years.
Deadwood, S. Dak.....	10	200. 00	All of every night.....	20 years.
Sioux Falls, S. Dak.....	16	138. 00	do.....	3 years.
Chattanooga, Tenn.....	158	96. 00	do.....	5 years.
Clarksville, Tenn.....	29	84. 00	Moon.....	Annual.
McMinnville, Tenn.....	8	62. 50	All of every night.....	3 years.
Memphis, Tenn.....	100	120. 00	do.....	Annual.
Nashville, Tenn.....	300	85. 77	do.....	3 years.
Tullahoma, Tenn.....	5	75. 00	To 12 p. m. every night.....	Do.
Bonham, Tex.....	10	126. 00	All of every night.....	5 years.
Dallas, Tex.....	165	95. 85	do.....	3 years.
Denison, Tex.....	42	126. 00	do.....	Do.
Galveston, Tex (city plant).....	175	75. 00	Moon all night.....	
Houston, Tex.....	92	150. 00	All of every night.....	5 years.
San Antonio, Tex.....	110	* 60	Moon all night.....	3 years.
Waco, Tex.....	30	150. 00	do.....	6 years.
Ogden, Utah.....	26	216. 00	Moon (Philadelphia).....	3 years.
Salt Lake City, Utah.....	200	150. 00	do.....	Do.
Brandon, Vt.....	16	74. 00	All of every night.....	1 year.
Burlington, Vt.....	120	* 30	Moon to 12:30 a. m.....	3 years.
Brattleboro, Vt.....	30	95. 00	To 12 p. m. 300 nights in year..	5 years.
Rutland, Vt.....	{ 8 54	127. 75 59. 31	{ All of every night..... To 12 p. m. every night.....	{ Annual.
St. Johnsbury, Vt.....	48	65. 00	Moon to 12 p. m.....	3 years.
Portsmouth, Va.....	70	94. 00	All of every night.....	5 years.
Dayton, Wash.....	18	150. 00	do.....	Annual.
Seattle, Wash.....	80	144. 00	do.....	Do.
Sprague, Wash.....	13	180. 00	do.....	25 years.
Tacoma, Wash.....	210	144. 00	Moon all night.....	3 years.

* Per night.

TABLE 4.—Data for arc lights of 2,000 nominal candle-power, etc.—Continued.

Locality.	Num- ber of lights.	Cost per light per year.	Period of illumination.	Term of contract.
Huntington, W. Va	64	\$54.00	All of every night.....	5 years.
Parkersburgh, Va	58	{ 108.00 96.00	{ ..do	3 years.
Piedmont, Va.....	14	100.00	do	5 years.
Beloit, Wis	30	75.00	To 1 a. m. every night.....	3 years.
Black River Falls, Wis	6	216.67	All of every night	5 years.
Eau Claire, Wis.....	76	110.00	do	Do.
Fond du Lac, Wis	38	72.00	(Philadelphia)	Do.
Green Bay, Wis.....	22	84.00	Moon, to 12 p. m.....	Annual.
La Crosse, Wis	131	100.00	Moon	5 years.
Milwaukee, Wis	417	112.50	All of every night	1 year.
Sheboygan, Wis	100	80.00	do	5 years.
Superior, Wis	125	146.00	do	3, 5, and 10 years.
Whitewater, Wis	34	100.00	Moon to 1:30 a. m	7½ years.
Cheyenne, Wyo.....	26	200.00	All of every night	3 years.

[Advertisement.]

OFFICE OF THE COMMISSIONERS, DISTRICT OF COLUMBIA,
Washington, October 18, 1890.

In compliance with the provisions of the act of Congress making appropriations to provide for the expenses of the government of the District of Columbia for the fiscal year ending June 30, 1891, approved August 6, 1890, the Commissioners of the District of Columbia hereby invite proposals for supplying gas and electric lights at reduced rates for municipal lighting in the District of Columbia upon annual, 5-year, and 10-year contracts, and upon any system. The act provided as follows:

"That the Commissioners of the District of Columbia shall investigate, ascertain, and report to the second session of the Fifty-first Congress what deduction may be made for gas and electric lighting, both for annual, 5-year, and for 10-year contracts, and that they be authorized to invite proposals for supplying said light at reduced rates, and in this they are not limited to any one system."

Full information will be furnished upon application at this office. The application should state whether information is desired concerning gas lighting, electric lighting, or both. As these proposals will be submitted to Congress, it is desirable that they should be received at this office not later than November 20, 1890, but proposals will be received at any time before March 1, 1891.

J. W. DOUGLASS,
J. W. ROSS,
H. M. ROBERT,
Commissioners, District of Columbia.

OFFICE OF THE COMMISSIONERS, DISTRICT OF COLUMBIA,
Washington, D. C., October 12, 1890.

SIR: The act making appropriations for the expenses of the government of the District of Columbia for the fiscal year ending June 30, 1891, approved August 6, 1890, provides, "That the Commissioners of the District of Columbia shall investigate, ascertain, and report to the second session of the Fifty-first Congress what deduction may be made for gas and electric lighting, both for annual, 5-year, and 10-year contracts, and that they be authorized to invite proposals for supplying said light at reduced rates, and in this they are not limited to any one system."

The Commissioners request a full expression of your views as to whether the present price for gas lighting in the District of Columbia can be properly reduced either for annual, 5-year, or 10-year contracts.

Respectfully,

W. TINDALL,
Secretary.

Mr. G. A. McILHENNY,
President, Washington Gaslight Company, Washington, D.C.

OFFICE OF THE COMMISSIONERS, DISTRICT OF COLUMBIA,
Washington, D. C., October 12, 1890.

SIR: The act making appropriations for the expenses of the government of the District of Columbia for the fiscal year ending June 30, 1891, approved August 6, 1890, provides, "That the Commissioners of the District of Columbia shall investigate, ascertain, and report to the second session of the Fifty-first Congress what deduction may be made for gas and electric lighting, both for annual, 5-year, and 10-year contracts, and that they be authorized to invite proposals for supplying said light at reduced rates, and in this they are not limited to any one system."

The Commissioners request a full expression of your views as to whether the present price for gas lighting in the District of Columbia can be properly reduced either for annual, 5-year, or 10-year contracts.

Respectfully,

W. TINDALL,
Secretary.

Mr. JOHN LEETCH,
President, Georgetown Gaslight Company, Washington, D. C.

OFFICE OF THE COMMISSIONERS, DISTRICT OF COLUMBIA,
Washington, D. C., October 12, 1890.

SIR: The act making appropriations for the expenses of the government of the District of Columbia for the fiscal year ending June 30, 1891, approved August 6, 1890, provides, "That the Commissioners of the District of Columbia shall investigate, ascertain, and report to the second session of the Fifty-first Congress what deduction may be made for gas and electric lighting, both for annual, 5-year and 10-year contracts, and that they be authorized to invite proposals for supplying said light at reduced rates, and in this they are not limited to any one system."

The Commissioners request a full expression of your views as to whether the present price for electric lighting in the District of Columbia can be properly reduced, either for annual, 5-year or 10-year contracts, with the system now employed by you, or with any other equally satisfactory system.

Respectfully,

W. TINDALL,
Secretary.

Mr. SAMUEL NORMENT,
President, United States Electric Lighting Company, Washington D. C.

WASHINGTON GASLIGHT COMPANY,
Washington, D. C., October 25, 1890.

GENTLEMEN: In reply to your letter of October 12, requesting a "full expression of our views as to whether the present price for gas lighting in the District of Columbia can be properly reduced, either for annual, 5-year, or 10-year contracts," after a full consideration of the matter we have the honor to present the following as our conclusions:

First. As to annual contracts. It is impossible for us to do the lighting on a 1 year contract and furnish the present service, viz, 2,600 hours for each lamp, with 6-foot burner, for less than \$20 for each lamp per year.

Second. For a 5-year contract, 2,600 hours for each lamp, mounted with a 6-foot burner, we are willing to accept \$19.50; the same for 3,000 hours for each lamp, \$21.50.

Third. For a 10-year contract, each lamp burning 3,000 hours, 6-foot burner, \$21; provided we are at no time required to light less than 5,000 lamps.

Permit us to say in connection with this subject that we believe the best interests of the city would be subserved by adopting the 3,000-hour system, either for 1, 5, or 10 year contracts.

We are desirous that the street lighting of this city should be as nearly perfect as it is possible to make it. We shall spare no effort to that end, and shall be glad if our propositions meet the approval of your honorable Board.

I am, yours, very respectfully,

GEORGE A. MCILHENNY, President.

The COMMISSIONERS OF THE DISTRICT OF COLUMBIA.

WASHINGTON GASLIGHT COMPANY,
Washington, D. C., December 2, 1890.

GENTLEMEN: Referring to our letter of October 25, 1890, making proposals for lighting this city with gas, we beg to submit herewith the following additional proposition, viz:

For a 10-year contract, 2,600 hours per annum for each lamp, mounted with a 6-foot burner, \$19 per annum for each lamp.

Very respectfully,

WM. B. ORME,
Assistant Secretary.

The COMMISSIONERS OF THE DISTRICT OF COLUMBIA.

THE GEORGETOWN GASLIGHT COMPANY,
Washington, D. C., October 17, 1890.

DEAR SIR: I beg to acknowledge the receipt of your communication of the 12th instant, with reference to the act of Congress making appropriations for the expenses of the government of the District of Columbia for the fiscal year ending June 30, 1891, approved August 6, 1890, which provides that the Commissioners of the District of Columbia shall investigate, ascertain, and report to Congress what deductions may be made for gas and electric lighting, both for annual, 5-year, and 10-year contracts, and asking an expression of my views as to whether the present price paid for gas lighting in the District of Columbia, can be properly reduced, etc. In reply to this inquiry I would respectfully state that the price now paid for gas for street lighting in Georgetown, D. C., viz, \$20 per lamp per annum, each lamp to burn 2,600 hours, with a 6-foot burner, is as low as could be expected.

The test for strength and purity of gas is more rigid in the District of Columbia than is required in any other city of which I have knowledge. The price now paid for street lighting includes lighting, extinguishing, and repairing. This item of repairs, in some sections of Georgetown, owing to the wanton destruction of lamps and glass, is in many cases so heavy, as to almost absorb the entire amount received by the company for the lamps thus destroyed.

I do not think that the present plan of letting out the contracts for street lighting annually is a good one. If either of the gas companies had the contract for 5 or 10 years, they would feel justified in making larger expenditures of money in substituting the most approved kind of burners and in greater effort to perfect the system of street lighting.

I do not think under the present system this company would enter into a contract for a less sum than is now paid by the District government. It would be willing to make a contract for 5 years at \$19.50 or for 10 years at \$19 for 2,600 hours, or \$22 for 3,000 hours burning per lamp per annum.

Very respectfully,

JOHN LEETCH,
President.

W. TINDALL, Esq.

AMERICAN GAS CONTROLLER AND FIXTURE COMPANY,
Springfield, Mass., November 25, 1890.

GENTLEMEN: I beg to respectfully make the following proposition relative to lighting the streets of the city of Washington with the lamps of the United States Arc Gas Lamp Company, of Springfield, Mass.

We will furnish such number of lamps as may be required, placed on the posts in working order, each lamp guaranteed not to consume more than 12 feet of cubic gas per hour, for the sum of \$50 each, guarantying to keep such lamps in good working order for the period of one year, providing not less than 100 lamps are ordered. Or, we will furnish lamps and light such streets as the Commissioners may designate as follows:

For the first year, for the sum of \$72.50 per lamp; for the second and all succeeding years, not less than 3, for the sum of \$47.50 per lamp.

There are, we are informed, 206 electric-arc lights in use on the principal avenues of the city at the present time, which, at \$219 per lamp, amounts to the sum of \$45,114 per annum. Estimating that two of the United States arc gas lamps will replace one of the electric-arc lamps, we have 412 arc gas lamps, at \$50 each for the lamps and \$3.50 each for maintenance, or \$87.50 each for the 412 arc gas lamps—\$36,050 as

18 GAS AND ELECTRIC LIGHTING IN DISTRICT OF COLUMBIA.

against \$45,114 for the 206 arc electric lights, or a saving to the government of \$9,064 the first year; after which, they owning the lamps, the saving would be (allowing \$37.50 each for the maintenance of 412 arc gas lamps, \$15,450) \$29,664 per annum on these lamps alone.

As to ordinary street lamps, one of the United States arc lamps, we will say, is equal to two ordinary lamps, the cost of the maintenance of which is \$20 per annum, or \$40 for two. There are 5,400 street lamps, which, should our lamp be adopted, would be 2,700 arc gas lamps. Five thousand four hundred ordinary lamps at \$20 per annum, \$108,000; 2,700 arc gas lamps at \$37 per annum, \$101,250; making an amount saving of \$6,750.

Very respectfully,

F. W. SANBORN,
Agent.

The COMMISSIONERS OF THE DISTRICT OF COLUMBIA,
Washington, D. C.

AMERICAN GAS CONTROLLER AND FIXTURE COMPANY,
Springfield, Mass., January 27, 1891.

GENTLEMEN: Under the provisions of the present appropriation bill, increasing the number of hours during which the gaslights of the city shall be lit, I desire to amend the proposals of the above company for lighting the streets and avenues of the city of Washington with the United States arc gas lamps as follows:

We will furnish and erect not less than 100 arc gas lamps of not less than 67 candle-power each; light, extinguish, clean, and keep the same in good order and repair for a term not less than 3 years, the said contract for so doing to be assumed by the Washington Gaslight Company, for the sum of \$62.50 per lamp per annum.

Very respectfully,

F. W. SANBORN, *Agent.*

The COMMISSIONERS OF THE DISTRICT OF COLUMBIA.

UNITED STATES ELECTRIC LIGHTING COMPANY,
Washington, D. C., November 21, 1890.

GENTLEMEN: In reply to your communication of the 18th instant I would state that this company is considering the increased cost of maintenance and extension of the underground system and the local cost of production, supplying lights at figures as reasonable as any company in the country, and it is difficult to determine wherein greater economy of production and consequently reduced rates can be satisfactorily effected.

Nevertheless, supposing that the national capital is at least desirous of keeping pace is improved lighting service with other cities, and even towns, throughout the country, and that a reasonable extension of the service may be anticipated from year to year, I think that upon the basis of a 5-year contract a reduction of 10 per cent. and upon the basis of a 10-year contract a reduction of 15 per cent from the present rates might be effected.

Very respectfully,

A. A. THOMAS,
President.

The COMMISSIONERS OF THE DISTRICT OF COLUMBIA.

THE ELECTRIC HEAT AND POWER COMPANY OF THE UNITED STATES,
TENTH AND F STREETS NORTHWEST,
Washington, D. C., November 20, 1890.

GENTLEMEN: In compliance with the provisions of the act of Congress making appropriations to provide for the expense of the government of the District of Columbia for the fiscal year ending June 30, 1891, approved August 6, 1890, "that the Commissioners of the District of Columbia shall investigate, ascertain, and report to the second session of the Fifty-first Congress what reductions may be made for gas and electric lighting, both for annual, 5-year, and for 10-year contracts, and that they be authorized to invite proposals for supplying said light at reduced rates, and in this they are not limited to any one system," the Electric Heat and Power Company of the United States will enter into a 5 or 10 year contract with the District of

Columbia to furnish and place underground conduits to be used for either arc or incandescent electric lighting, distributed throughout the cities of Washington and Georgetown; the arc lights to be of 2,000 candle-power per lamp, at 45 cents per lamp per night; the incandescent lights to be of 25 candle-power, at \$15 per lamp per annum; the lights to burn 2,600 hours during the year, provided the privileges now enjoyed by the present electric light and gas companies in regard to private or commercial lighting be also extended to us, we agreeing to furnish electric lighting to private consumers at reasonable rates, all the material and work to be first class in every respect and of such character as has stood the test of time and experience. The cables to be Waring lead covered, thoroughly insulated, manufactured by the Standard Underground Cable Company of Pittsburgh, Pa., and to be of the same high character of underground cables now successfully used in Washington City, New York, Philadelphia, Chicago, St. Louis, and elsewhere in the United States, also in several countries in Europe and South America. The whole to be under the supervision and inspection at all times of the Commissioners of the District of Columbia.

Very respectfully,

THE ELECTRIC HEAT AND POWER COMPANY OF THE UNITED STATES,

By C. H. JACKSON,
President.

D. I. MURPHY,
Secretary, 941 F Street Northwest.

The COMMISSIONERS OF THE DISTRICT OF COLUMBIA,
Washington, D. C.

THE ELECTRIC HEAT AND POWER COMPANY OF THE UNITED STATES,

TENTH AND F STREETS NORTHWEST,
Washington, D. C., December 12, 1890.

GENTLEMEN: Referring to the proposition submitted by the Electric Heat and Power Company of the United States on the 20th ultimo, I have the honor to inform you that the company now desires to amend said proposition by agreeing to maintain the arc lights, therein mentioned, from sunset to sunrise instead of "2,600 hours during the year."

Very respectfully,

D. I. MURPHY,
Secretary.

THE ELECTRIC HEAT AND POWER COMPANY OF THE UNITED STATES.

The COMMISSIONERS OF THE DISTRICT OF COLUMBIA,
Washington, D. C.

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IN THE SENATE OF THE UNITED STATES.

FEBRUARY 3, 1891.—Ordered to lie on the table and be printed.

Mr. GIBSON presented the following

**MEMORIAL OF MEMBERS OF THE PRESBYTERIAN CLERGY OF
NEW ORLEANS PRAYING AN AMENDMENT TO THE CONSTITU-
TION TO PROHIBIT LOTTERIES.**

*To the honorable the Senate and House of Representatives of the Congress
of the United States :*

We respectfully ask you to propose for adoption an amendment to the Constitution of the United States. We desire that such amendment shall prohibit the drawing of lotteries, the chartering of lottery companies, and the sale of lottery tickets within the borders of the United States.

We urge it for the reason that by observation on the spot, where for 22 years the Louisiana State Lottery has flourished, its evil has been conspicuous throughout that time, and its power for evil has increased with its years.

It is unblushing in its temptations, its tickets being in open market upon every street.

This public solicitation at every corner and open traffic in tickets as quasi-legitimate merchandise has blunted the moral sense of the community to such an extent, that the city public press has dared to stigmatize opposition thereto as fanaticism.

It has drawn the weak into theft where sacred funds have been intrusted to their keeping ; it has scattered the savings of a lifetime, overcoming by its seductions the frugality which has laid them up for a " rainy day ; " and has unamericanized those whom it has intoxicated with its delusive hopes, who look to chance for fortune, whereas a country's pride and reliance must be its citizens who by thrift, pluck, power, perseverance, and independence build up their own fortunes, and with these the fortunes of each State.

It is destroying the moral fiber and habits which make good citizens, and breeding a class whose shiftless, thriftless methods will create a pauperhood in this land, a fit hotbed for socialism, communism, and anarchism, as have sprung up in Europe, amid a pauper populace, beggared by governmental errors.

Its victims have committed every crime in the calendar from petty larceny, in order to buy a 25-cent ticket, to suicide to end a hopeless existence, after the dreadful infatuation had induced the hapless self-murderer to squander what had been needed to buy bread for a helpless family. And the prize-winner has been no less a victim, as his quickly gotten wealth has been wasted in riotous living, and he has been confirmed in the habits of a spendthrift and debauchee,

It creates a spirit of ungodliness, where the blessings of Providence are not looked to as waiting upon the practice of industry and virtue, but where the getting of wealth, being the chief end, all means, though unscrupulous or criminal, are deemed condonable for this result. It has controlled legislatures in the past; and through the Progressive League it offers now to interfere in local politics throughout the State; by testimony recently adduced, it is shown to have tampered with the official records of the State senate, and it is unjustly sapping the esteem and confidence which a people should forever feel in the judiciary, by impudently claiming that there are upon the bench those who are lottery judges.

It has shown that there is nothing so sacred that it will not attempt to bend to its own uses, and as its power has been its wealth, it has created in the popular mind a belief in the corruptibility of public officers by bribery, which threatens, if the Louisiana Lottery Company be rechartered, to destroy the efficiency of government in this State.

And every evil in this State will be reproduced in every State of this Union if the lottery charter be regranted. How far it has spread already can be known only to those who have discovered the lottery gamblers in the other States. The company claims that it gets but 3 per cent. of its earnings from Louisiana and 97 per cent. from beyond its borders.

If 3 per cent. of the injury worked by the lottery company has nearly destroyed this State, who can calculate the aggregate harm throughout this Union. It has injured the Federal body from this center; the Federal hand should reach here and every other where to cut off the evil. A lottery in any State is a source for evil throughout every State, and every State legislature should adopt the amendment which your body should propose, to protect its own people and its neighbors from this leper of fraud, infamy, and contamination.

B. M. Palmer, Pastor First Presbyterian Church, New Orleans;
F. O. Koelte, Pastor of Second German Presbyterian Church;
Thomas R. Markham, Pastor of Lafayette Presbyterian Church, New Orleans; Henry M. Smith; Corydon W. Tra-
wick, Pastor Canal Street Presbyterian Church, New Orleans;
R. Q. Mallard, Pastor Nap. Avenue Presbyterian Church;
Chas. A. Hyland, Pastor Third Presbyterian Church, New Orleans;
John N. Lyle, Pastor Carrollton Presbyterian Church;
Owen Riedy, Pastor Immanuel Presbyterian Church, New Orleans;
Louis Voss, Pastor First German Presbyterian Church; A. J. Witherspoon.



IN THE SENATE OF THE UNITED STATES.

FEBRUARY 4, 1891.—Presented, referred to the Committee on Post-Offices and Post-Roads, and ordered to be printed.

MR. STEWART SUBMITTED THE FOLLOWING MEMORIAL OF THE NATIONAL FARMERS' ALLIANCE AND INDUSTRIAL UNION OF AMERICA PRAYING FOR AN AMENDMENT TO THE CONSTITUTION OF THE UNITED STATES FORBIDDING THE STATES AND TERRITORIES ESTABLISHING OR MAINTAINING ANY LOTTERY.

To the honorable the President and members of the Senate of the United States and the honorable the Speaker and members of the House of Representatives of the United States, composing the Congress of the United States :

The memorial of the undersigned, president of the National Farmers' Alliance and Industrial Union of America, with respect, shows—

That on the first Tuesday of December, 1890, there assembled at Ocala, Fla., a convention composed of the delegates of the National Farmers' Alliance and Industrial Union of America. The convention thus assembled consisted of delegates, duly accredited, from 28 States and Territories, to wit: Arkansas, Alabama, California, Florida, Georgia, Illinois, Indiana, Kentucky, Louisiana, Maryland, Missouri, Michigan, Mississippi, New York, Nebraska, North Carolina, North Dakota, Kansas, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Virginia, West Virginia, Indian Territory, and Oklahoma.

The convention so assembled adopted the following resolution:

Whereas lotteries are most pernicious in their effects and are destructive of the morals of the people as well as of their material interests, and are condemned by the virtually unanimous sentiment of the people of the United States, expressed by the highest courts of the land and by the laws of forty-two States of this Union;

Whereas the Louisiana State Lottery Company has grown into gigantic proportions; has become a national evil; is collecting an annual tribute of nearly \$28,000,000 from the people of the United States; is operating its nefarious business upon a scheme which, even from the standpoint of gamblers, is grossly unfair; has spread its agencies over the whole country, and has endeavored to lay the temptation of gambling in the way of every man, woman, and child in the land; and, unsatisfied by the accumulation of the enormous wealth of which during the last quarter of a century it has spoliated the people of the United States, is now striving, by the use of all its tremendous power and uncounted gold, to obtain from the people of Louisiana an extension of life for 25 years from January 1, 1894;

Whereas the recent attempts of the Louisiana State Lottery Company to possess itself of the government of the State of Dakota, and its unparalleled audacity exhibited to the whole country during the recent session of the legislature of the State of Louisiana, show beyond all question its power to make dangerous attacks upon any State of the Union;

Whereas it is the duty of the Congress of the United States to protect each and every State of the Union against the great evils arising from the Louisiana State Lottery Company and all other lotteries, and especially against the tremendous dangers of an onslaught by the Louisiana State Lottery Company upon their governments for the purpose of obtaining so-called lottery charters, thereby fostering the corruption of public men and exciting political commotion of the gravest character;

Whereas Congress has partially performed its duty to the nation by the enactment of the recent anti-lottery law, but the same will prove ineffectual because of the immense power and wealth of the Louisiana State Lottery Company, and especially because of its determination to violate the law and the subterfuges it is contriving to evade the same;

Whereas, the only means by which the Louisiana State Lottery Company and all other lotteries can be effectually destroyed for all time, and the people of the United States relieved permanently from one of the greatest evils of the times, and the States made absolutely secure from attacks upon their governments by such corrupt corporations, and the national sentiment against all lotteries be materialized and enforced, is the adoption of an amendment to the Constitution of the United States forbidding the States from establishing or maintaining any lottery, or from granting any lottery charter;

Whereas the Farmer's State Union of Louisiana has arrayed itself against the Louisiana State Lottery Company and has done noble work in the great struggle being carried on in that State against the great gambling association; and

Whereas we sympathize cordially with our brothers of Louisiana, and we know that they fully deserve our thanks for their efforts in behalf of their State and of the whole Union, and that they are entitled to the fullest assistance on the part of our order: Therefore be it

Resolved, That it is the sense of this body that an amendment to the Constitution of the United States should be submitted by the Congress of the United States forbidding any State from granting a lottery charter, or franchise of any kind, to carry on lottery schemes, and annulling all such charters and franchises if already granted. That the president of this body be requested at an early day to memorialize Congress in the name of this body, praying for the passage of such an amendment.

Resolved further, That a committee of three be appointed by the Chair whose duty it shall be, under the supervision of the executive committee, to correspond with all the alliances and unions throughout the United States, and with all other bodies in sympathy with the movement, requesting the presentation at once to Congress of similar memorials.

. In submitting to your honorable body the resolution thus adopted, and in discharge of the duty imposed on your memorialist, speaking for said convention, the following considerations, in addition to those stated in the resolution, are presented:

(1) That if there is a single principle in social morality and in political economy upon which there is no division of opinion among the States composing this Union, it is as regards that principle which condemns public gambling as vicious, immoral, and prejudicial to the entire interests of a community.

(2) That of all the forms and modes of gambling lottery gambling is the most insidious and pernicious in its corrupting influence, the most widespread in its operations, the most ruinous in its effects, and the most difficult to detect and repress.

(3) That the unanimity of opinion in all the States of the Union in condemning lottery gambling is demonstrated by the fact that forty-two States have in their constitutions or statutes expressly prohibited lotteries and placed in the category of criminal acts the buying or selling of lottery tickets.

(4) That the practical impossibility of suppressing lottery gambling in other States as long as it is tolerated in one State is shown by the fact that the Louisiana State Lottery Company has existed in the State of Louisiana for more than 20 years, and openly boasts that it derives more than 97 per cent of its vast revenues from the sale of its tickets in States where the sale of lottery tickets is forbidden by law. On computations often published, and the correctness of which have never been denied, its gross annual revenues have been stated to exceed \$28,000,000. As the company has existed for over 20 years this sum would represent an aggregate amount of more than \$500,000,000 collected during the period of its existence by this single lottery from the American people in defiance and through violation of law. This enormous income of this one concern alone, raised from the whole body of

the American people in open and avowed disregard of law, is all the more remarkable as the scheme of this particular lottery gives its players so few chances of winning that it has been denounced as fraudulent even as a lottery.

A distinguished and perfectly impartial mathematician, the late Prof. Richard A. Proctor, has examined the problem of winning in the Louisiana State Lottery Company, and as the result of his examination has made the following statement:

But the greed for chance-won wealth is so great among men of weak minds, and they are so large a majority of all communities, that the bait may be dangled for them without care to conceal the hook. In all lotteries and gambling systems which have yet been known the hook has been patent, and the evil it must do if swallowed should have been obvious, yet it has been swallowed greedily.

A most remarkable illustration of the folly of those who trust in luck, and the cool audacity of those who trust in such folly with more reason but with more rascality, is presented by the Louisiana Lottery in America. This is the only lottery of the kind now permitted in America. Indeed, it is nominally restricted to the State of Louisiana, but practically the whole country takes part in it, tickets being obtainable by residents in every State of the Union.

The peculiarity of the lottery is *the calm admission, in all advertisements, that it is a gross and unmitigated swindle*. The advertisements announce that each month 100,000 tickets will be sold, each at \$5, shares of one-fifth being purchasable at \$1. Two commissioners—Generals Early and Beauregard—control the drawings; so that we are told, and may well believe, the drawings are conducted with fairness and honesty, and in good faith to all parties. So far, all is well. We see that each month, if all the tickets are sold, the sum of \$500,000 will be paid in. From this monthly payment we must deduct \$1,000 paid to each of the commissioners, and perhaps some \$3,000 at the outside for advertising. We may add another sum of \$5,000 for incidental expenses, machinery, sums paid to agents as commission on the sale of tickets, etc. This leaves \$490,000 monthly if all the tickets are sold. And as the lottery is “incorporated by the State legislature of Louisiana for charitable and educational purposes” we may suppose that a certain portion of the sum paid in monthly will be set aside to represent the proceeds of the concern and justify the use of so degrading a method of obtaining money.

Probably it might be supposed that 24 per cent per annum, or 2 per cent per month would be a fair return in this way, the system being entirely free from risk. This would amount to \$9,800, or say \$10,000, monthly. Those who manage the lottery are not content, however, with any such sum as this, which would leave \$480,000 to be distributed in prizes. They distribute \$215,000 less, the total amount given in prizes amounting to only \$265,000. If the 100,000 tickets are all sold—and it is said that few are ever left—the monthly profit on the transaction is not less than \$225,000, or 45 per cent on the total amount received per month. This would correspond to 540 per cent per annum if it were paid on a capital of \$500,000. But in reality it amounts to much more, as the lottery company runs no risk whatsoever. The Louisiana Lottery is a gross swindle, besides being disreputable in the sense in which all lotteries are so. What would be thought if a man held an open lottery, to which each of 100 persons admitted paid £5 and taking the sum of £500 thus collected, were to say: “The lottery, gentlemen gamblers, will now proceed; £265 of the sum before me I will distribute in prizes as follows: (indicating the number of prizes and their several amounts), “the rest, this sum of £235, which I have here separated, I will put into my own pocket” (suiting the action to the word) “for my trouble in getting up this lottery?” The Louisiana Lottery is a transaction of the same rascally type—not rendered more respectable by being on a very much larger scale.

If a scheme like the one thus described has succeeded during 20 years of existence, in taking from the people of all the States of the Union a vast sum of money annually, that fact alone irresistibly calls for such action as will render the spoliation no longer possible in the future.

The recent postal legislation forbidding the use of the United States mails to lotteries, whilst accomplishing a beneficent purpose, will not, alone, prevent the continuance of the wrong. Nothing could more completely prove this than the fact that, despite this legislation, the Louisiana Lottery Company is now pressing in the State of Louisiana the adoption of an amendment to its constitution authorizing the con-

tinuance of a lottery charter for the period of 25 years, and that in order to secure this charter it offers the sum of \$1,250,000 per annum to the people of that State during the 25 years. This corporation, or its main promoters, therefore, despite the postal legislation, considers that the field of its operation will be so wide that it is willing to pay for the privilege of carrying on its illegal business the large sum above named.

The reasons which it urges for the adoption of this amendment or recharter for another quarter of a century, serve to demonstrate the absolute necessity for Federal interference to protect the other States of the Union from its illicit business. One of these reasons, recently published in a paper emanating from an organization having for its purpose the pressing of the adoption of the amendment, has the hardihood to urge that as a sum of money is paid every year by the people of Louisiana to the general Government, under the internal revenue system and by way of taxes on imports, the recharter of the lottery will enable the people of Louisiana to get back from the people of the other States in part the sum of the taxes paid by the people of Louisiana to the Federal Government. Or, in plain English, the people of Louisiana are invited to sanction this great wrong in order that they may obtain from the lottery company a part of the money which that company will illegally filch from the citizens of the other States, and that thus the people of the State of Louisiana will practically avoid the consequences of Federal taxation.

The cool and cynical effrontery of this unique proposition to offset taxes by a participation in the profits of lottery gambling is so incredible, that we beg to give the very words of the proposition. They are quoted from a document issued by an organization known as the "Progressive League," which is flooding the State of Louisiana with its papers in favor of the lottery amendment :

The National Government imposes an internal-revenue tax upon the people of Louisiana which amounts to many thousands of dollars annually. In addition to this, the people of the city pay in the way of import duty hundreds of thousands of dollars which go into the National Treasury. More than one-fourth of these annual taxes are devoted to the payment of pensions to soldiers who fought in the Northern army. They believed that their cause was just, and those who lost in the struggle the physical means of making a livelihood, and also the widows and orphans of those who lost their lives, are supported largely by the taxes which the people of Louisiana pay each year. The revenue arising from the lottery business in Louisiana does not come from Louisiana; barely 3 per cent. of it is paid by the people of this State, 97 per cent. of it comes from other States and Territories.

This flagrantly vicious argument emphatically demonstrates the justness of the request which this memorial makes. The evil is a vast one. It is a national one. It has existed for 20 years. During that time it has taken from the honest people of the United States an enormous amount of money. Its continuance is threatened, not for a brief period, but for a period of a quarter of a century. The submission of the amendment will not only eradicate it in its present form, but will render its recurrence impossible, and will thus, at once, put an end to what, it is submitted, has become one of the most crying of national evils.

Respectfully submitted.

L. L. POLK,
*President National Farmer's Alliance and Industrial Union,
and Chairman Memorial Committee.*

51ST CONGRESS, }
2d Session. }

SENATE.

{ MIS. DOC.
{ NO. 60.

REPORT

OF THE

NATIONAL ACADEMY OF SCIENCES

FOR

THE YEAR 1890.



WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1891.

LETTER OF TRANSMITTAL.

NATIONAL ACADEMY OF SCIENCES,

Washington, D. C., January 10, 1891.

SIR: In conformity with the requirements of the act of incorporation, approved March 3, 1863, I have the honor to submit herewith a report of the operations of the National Academy of Sciences during the past year.

Very respectfully,

O. C. MARSH,

President of the National Academy of Sciences.

The PRESIDENT OF THE SENATE.

REPORT OF THE NATIONAL ACADEMY OF SCIENCES.

The National Academy of Sciences was established by act of Congress in March, 1863, with power to frame its own constitution, select its own members, and provide in other respects for its continuance and successful operation.

The object of the Academy is to advance science, and especially to investigate, examine, experiment, and report on any subject of science or art whenever called upon by any department of the Government.

The Academy contains at present about 100 members, and these have all been selected for their original researches in science. They represent within their ranks nearly every department of knowledge, and their services, in accordance with the charter of the Academy, are always at the disposal of the Government, without compensation.

SESSIONS OF THE NATIONAL ACADEMY.

During the past year, the Academy has held three sessions. The first was the regular annual meeting, held in Washington, D. C., April 15 to 18, 1890; the second was a scientific session in Boston, Mass., November 11 to 13, 1890; and the third was a special session in Boston, November 12, 1890.

STATED SESSION.

HELD IN WASHINGTON CITY, APRIL 15 TO 18, 1890.

The Washington session was held in the National Museum, the president, Prof. O. C. Marsh, presiding.

The following members were present during the session:

Abbot.	Dutton.	Hyatt.	Newton, H. A.
Barker.	Gibbs, J. W.	Langley.	Pumpelly.
Bell.	Gill.	Lesley.	Putnam.
Billings.	Goode.	Marsh.	Remsen.
Boss.	Gould.	Meigs.	Rowland.
Brewer.	Hague.	Mendenhall.	Schott.
Brooks.	Hall, A.	Michelson.	Scudder.
Brush.	Hall, J.	Mitchell, S. W.	Walker.
Chandler, S. C.	Hastings.	Morse.	Watson.
Cope.	Hill, G. W.	Newcomb.	Young.

During this session, papers were read and discussed in the following order:

1. MICHELSON, A. A.: On the application of interference methods to astronomical measurements. Discussed by Messrs. Hall and Michelson.
2. TODD, D. P.; presented by the home secretary: Totality of the eclipse of 1889, December 22. Read by the home secretary.
3. SCUDDER, S. H.: Physiognomy of the American Tertiary Hemiptera. Discussed by Messrs. Cope and Morse.
4. ROWLAND, H. A.: On the spectrum of metals. Discussed by Messrs. W. Gibbs, Young, Rowland, and Michelson.
5. CHANDLER, S. C.: A system of classification of variable stars. Discussed by A. Hall, Gould, Michelson, and Chandler.
6. WOOD, H. C.: The effects of the inhalation of nitrogen, nitrous oxide, oxygen, and carbonic acid upon the circulation; with special reference to the nitrous oxides, anæsthesia, and asphyxia. Read by Mr. Billings. Discussed by Messrs. Cope and Billings.
7. BROOKS, W. C.: The budding of salpa considered in relation to the question of the inheritance of acquired characters. Discussed by Messrs. Cope and Brooks.
8. GOODE, G. BROWN, and TARLETON H. BEAN: Recent advances towards a knowledge of the fishes of the great oceanic depths. Discussed by Mr. Gill.
9. GILL, THEO.: The inter-relationships of the Ichthyopsida. Discussed by Mr. Cope.
10. LANGLEY, S. P.: On the cheapest light. Discussed by Messrs. Young, Newcomb, Langley, and Scudder.
11. PUMPELLY, R.: On the relation of secular disintegration to certain crystalline and transitional schists.
12. PUMPELLY, R.: On the structure of the Green Mountains.
13. GILL, THEO.: The Notacanthoid fishes as representatives of a peculiar order.
14. GILL, THEO.: The Halosauroid fishes typical of a special order.
15. REMSEN, IRA: Researches on the double halides.
16. REMSEN, IRA: Researches on the sulphinides.

REPORTS OF COMMITTEES.

Mr. Gould presented a report from the committee of the council on the classification of the Academy into sections. This report was referred to the council.

The chairman of the committee on ways and means to provide a fund for the Academy being absent, the president reported progress.

For the committee on publication, the home secretary stated that Part 2 of Volume IV of the memoirs had been finished, after long delays, and was now being distributed by the Smithsonian Institution; also that the report of the president for 1889, with four memoirs, was in the hands of the Senate committee. The president appointed Mr. Mendenhall to fill the vacancy existing on this committee.

Mr. Gill reported progress on the bibliography of the publications of the Academy.

On behalf of the committee on the relation of the Academy to the Government, the president stated briefly that the relations to the Government had been very cordial. Mr. Brush was appointed to fill the vacancy on this committee.

Mr. Morse expressed the opinion that members of the Academy should receive Government publications on subjects in which they were especially interested, and the president referred the matter to the committee on the relation of the Academy to the Government.

Mr. Morse presented the following resolution, which was adopted :

Resolved, That the committee on the relation of the Academy to the Government be requested to ascertain what steps are necessary to secure a distribution of Government publications to members of the National Academy, and report the same to the Academy at its next meeting.

For the board of trustees of the Watson fund, Mr. Newcomb said that there had been no formal proceedings since last year's meeting. Mr. A. Hall was appointed to fill the vacancy on this committee, caused by the death of Mr. Coffin.

ELECTIONS.

The following members were elected for the council for the ensuing year : Messrs. Brush, Gould, Meigs, Newcomb, Remsen, and Walker.

RECOMMENDATIONS FROM THE COUNCIL.

The following recommendations from the council were adopted by the Academy :

1. That Mr. C. W. Shoemaker be appointed recording secretary for the present meeting.
2. That the membership fee for the ensuing year be \$5.
3. That the consideration of the amendment to the constitution dividing the membership into sections be postponed until the next stated session, and that the home secretary be authorized to print copies of the report on the subject for the information of the members.

BIOGRAPHICAL MEMOIRS.

At a public session of the Academy, held on the evening of April 16, the following biographical memoirs were read :

Of Dr. James C. Dalton, by Dr. S. Weir Mitchell.

Of Professor Elias Loomis, by Prof. H. A. Newton.

Of Prof. Leo Lesquereux, by Prof. J. P. Lesley.

PRESENTATION OF THE HENRY DRAPER MEDAL.

At the same public session, April 16, the third Henry Draper gold medal was presented to Prof. H. A. Rowland, for his researches on the solar spectrum, as well as for his investigations in astronomical physics.

REPORT OF THE AUDITING COMMITTEE.

The following report of the auditing committee was presented to the Academy, and, on motion of Mr. Reusen, was adopted:

Washington, D. C., April 16, 1890.

To the President of the National Academy of Sciences:

SIR: The committee appointed to audit the treasurer's accounts, and to compare them with the report made by the committee on the securities held by the Academy, respectfully report that they have examined the books and the accounts of the treasurer, and have compared the vouchers with the disbursements reported, and have compared the receipts with the record of dues received from members, and with the record of interest received from invested funds of the Academy, and that they have also compared the accounts of sales of bonds and reinvestments in loans, and find the same to be correct.

T. C. MENDENHALL.

SAM. H. SCUDDER.

ARNOLD HAGUE.

TREASURER'S REPORT.

April 15, 1890.

To the President of the National Academy of Sciences:

SIR: I have the honor to transmit herewith my financial report as treasurer of the National Academy of Sciences for the year ending April 15, 1890.

1. *General account, April 16 1889, to April 15, 1890.*

RECEIPTS.

Balance brought forward from April 16, 1889.....	\$410.77
Amount of invested income	*500.00
Income received during the year	460.26
Total to be accounted for.....	1,371.03

DISBURSEMENTS.

Disbursed during the year.....	417.67
Balance on hand	453.36
Invested income on hand	*500.00
Actual balance after deducting outstanding obligations.....	953.36

2. *The Bache trust fund.*

RECEIPTS.

Balance brought forward from April 16, 1889.....	\$3,500.95
Income received during the year	1,632.45
Total to be accounted for.....	5,133.40

* Invested in District of Columbia 3.65 bonds.

DISBURSEMENTS.

Disbursed during the year.....	\$599.71
Balance on hand.....	4,533.69
Actual balance after deducting outstanding obligations.....	1,639.45

3. *The Watson trust fund.*

RECEIPTS.

Balance brought forward from April 16, 1889	\$298.39
Amount of invested income	*1,500.00
Income received during the year	747.57
Total to be accounted for.....	2,545.96

DISBURSEMENTS.

Disbursed during the year	100.00
Balance on hand	945.96
Invested income on hand.....	*1,500.00
Actual balance after deducting outstanding obligations	2,445.96

4. *The Henry Draper medal fund.*

RECEIPTS.

Balance brought forward from April 16, 1889.....	\$740.31
Income received during the year.....	167.52
Total to be accounted for	907.83

DISBURSEMENTS.

Disbursed during the year	†463.88
Balance on hand	443.95

5. *The J. Lawrence Smith medal fund.*

RECEIPTS.

Balance brought forward from April 16, 1889.....	\$1,237.78
Income received during the year	239.22
Total to be accounted for.....	1,477.00

DISBURSEMENTS.

Disbursed during the year	†540.00
Balance on hand.....	937.00

Very respectfully,

J. S. BILLINGS,
Treasurer National Academy of Sciences.

* Invested in District Columbia 3.65 bonds.

† Reserve fund; Draper, \$260; Smith, \$540.

10 REPORT OF THE NATIONAL ACADEMY OF SCIENCES, 1890.

REPORT OF THE COMMITTEE ON SECURITIES HELD BY THE ACADEMY.

The committee, Messrs. Schott and Goode, appointed to verify the securities held by the Academy, presented the following report, which was approved :

1. *General fund.*

District of Columbia 3.65 bonds.....	\$500.00
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2. *Bache trust fund.*

United States 4 per cent. bonds, registered.....	\$3,850.00
Philadelphia 6 per cent. bonds, registered.....	600.00
United States 4½ per cent bonds, registered	42,100.00
Davenport 6 per cent. bonds, coupon.....	1,000.00
	47,550.00

Deed for 160 acres of Missouri lands to A. D. Bache, not yet transferred to the name of the Academy.

3. *Joseph Henry fund.*

An agreement with the Pennsylvania Company for insurance on lives and granting annuities, as to the final disposition of the Joseph Henry fund of \$40,000. The above will not be available until the decease of all of Professor Henry's children.

4. *Watson trust fund.*

Certificate for one hundred and thirty-four shares of the capital stock of the Michigan Life Insurance Company.....	\$6,700.00
District of Columbia 3.65 bonds	1,500.00
United States 4½ per cent. bonds, registered.....	6,200.00
United States 4 per cent. bonds, registered	850.00
	15,250.00

5. *Henry Draper medal fund.*

United States 4 per cent. bonds, registered.....	5,000.00
Deed of trust of Mary Anna Palmer Draper to the National Academy of Sciences.	

6. *J. Lawrence Smith medal fund.*

United States 4½ per cent. bonds, registered.....	7,200.00
Deed of trust of Sarah Julia Smith to the National Academy of Sciences.	

Amount of available securities.....	75,500.00
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NEW MEMBERS.

The following new members were elected: Messrs. George L. Goodale, Russell H. Chittenden, Thomas L. Casey, and Richmond M. Smith.

NOMINATIONS.

Twelve nominations for membership in the Academy were read, These will be acted upon at the next stated session,

INVITATIONS.

The members of the Academy received an invitation to accept the privileges of the Cosmos Club during their stay in Washington.

The U. S. Commissioner of Fish and Fisheries also extended an invitation to members of the Academy and their friends, to visit the marine and fresh-water aquaria in the Commission building, near the National Museum.

Mr. Langley invited the members of the Academy, with their families and friends, to inspect the new physical apparatus in the small building near the Smithsonian Institution.

Mr. J. P. Lesley, of Philadelphia, exhibited a geological model of the condition of the upper surface of the Medina sandstone in the State of Pennsylvania.

DEATH OF MEMBER.

The president announced the death, since the last meeting, of Prof. J. H. C. Coffin, one of the original members of the Academy. Professor Coffin died January 8, 1890. Mr. Gould was appointed to prepare the biographical memoir.

The Academy adjourned April 18, 1890, to meet in Boston, Mass., in scientific session, November 11, 1890.

SCIENTIFIC SESSION.

HELD IN BOSTON, MASS., NOVEMBER 11 TO 13, 1890.

A scientific session, for the reading of papers only, having been called by the council, as announced at the April meeting, the Academy met in the lecture room of the Boston Society of Natural History, Boston, Mass., on November 11, 1890. The meetings were continued on the 12th and 13th.

The president, Prof. O. C. Marsh, presided, and the following members were present during the session :

Abbot.	Farlow.	Johnson.	Powell.
Barker.	Gibbs, W.	Langley.	Pumpelly.
Boss.	Gilbert.	Lovering.	Putnam.
Bowditch.	Gill.	Marsh.	Rogers, W. A.
Brewer.	Gould.	Mendenhall.	Scudder.
Brush.	Hague.	Michelson.	Trowbridge, J.
Casey.	Hall, A.	Mitchell, H.	Walker.
Chandler, C. F.	Hall, J.	Morse.	Watson.
Chandler, S. C.	Hill, H. B.	Newberry.	White.
Chittenden.	Hyatt.	Newton, H. A.	
Crafts.	Jackson.	Pickering.	

The following papers were read and discussed :

1. CHITTENDEN, R. H. : On the Primary Cleavage products formed in the digestion of the Albuminoid Gelatin. Discussed by Mr. W. Gibbs.
2. PICKERING, E. C. : On the Classification and Distribution of the Stellar Spectra.
3. CATLIN, R. ; presented by S. Weir Mitchell : On the Relation of Atmospheric Electricity, Magnetic Storms, and Weather Elements, to a case of Traumatic Neuralgia. Read by title.
4. BOWDITCH, H. P. : On the Growth of Children studied by Galton's method of Percentile Grades.
5. TROWBRIDGE, J. : On Electrical Oscillations in Air, together with Spectroscopic Study of the motions of Molecules in Electrical Discharges. Discussed by Mr. Michelson.
6. CROSS, C. R. ; presented by F. A. Walker : Some considerations regarding Helmholtz's Theory of Dissonance.
7. ROGERS, W. A. : A critical Study of a Combined Meter and Yard upon a surface of gold, the Meter having subdivisions to two millimetres, and the Yard to tenths of inches.
8. ROGERS, W. A. : On Evaporation as a disturbing Element in the determination of Temperatures. Mr. Rogers's papers were discussed by Messrs. Crafts, Gould, and Pickering.
9. FEWKES, J. W. ; presented by A. Hyatt : On the use of the Phonograph in the Study of the Languages of the American Indians. Discussed by Mr. Powell.
10. WALKER, F. A. : On the Probable Loss in the Enumeration of the Colored People of the United States, at the Census of 1870. Discussed by Messrs. Scudder and Newton.
11. NEWTON, H. A. : On the Capture of Periodic Comets by Jupiter. Discussed by Messrs. Boss and Chandler.
12. OSBORNE, T. B. ; presented by S. W. Johnson : On the Proteids of the Oat Kernel. Discussed by Messrs. Gibbs and Johnson.
13. CHANDLER, S. C. : On the present aspect of the problems concerning Lexell's comet. Discussed by Messrs. Boss, Gould, and Newton.
14. NEWBERRY, J. S. : The Great Falls Coal Field, Montana ; its geological age and relations. Discussed by Mr. White.
15. GIBBS, W. : Notes on the separation of the oxides in cerite, samarskite, and gadolinite. Discussed by Messrs. Barker and Chandler.
16. GILL, T. : On the relationships of the Cyclopteroidea.
17. DOLBEAR, A. E. ; presented by J. Trowbridge : On the origin of electric-magnetic waves

SPECIAL SESSION.

HELD IN BOSTON, MASS., NOVEMBER 12, 1890.

A special session of the Academy having been called by the council, in accordance with Article III, section 1, of the constitution, the Academy convened at the Boston Society of Natural History, November 12, 1890, the president, Prof. O. C. Marsh, presiding.

The president submitted his annual report to Congress, as far as completed, and the following recommendation from the council was adopted by the Academy :

Resolved, That the president be authorized to include in his report the proceedings of the present meeting ; and, also, any reports to the Government submitted to the Academy during the year.

INVESTIGATION OF THE NORTH MAGNETIC POLE.

The president read a letter from the Secretary of the Treasury, dated May 22, 1890, requesting the appointment of a committee composed of members of the National Academy of Sciences, or others familiar with the problems involved, to formulate a plan for a systematic investigation of the north magnetic pole. In accordance with this request, the president stated that he had appointed the following committee:

Prof. S. P. Langley, Secretary, Smithsonian Institution, *Chairman*.

Gen. Henry L. Abbot, U. S. Army.

Prof. William P. Trowbridge, Columbia College.

Prof. Alfred M. Mayer, Stevens Institute.

Prof. Charles A. Schott, U. S. Coast and Geodetic Survey.

Prof. John Trowbridge, Harvard University.

Prof. Charles Carpmael, University of Toronto.

UNIFORMITY OF MEASURES IN PHYSICAL APPARATUS.

The following resolution, proposed by Mr. Langley and recommended by the council, was adopted by the Academy:

Resolved, That the president appoint a committee of three members to secure such uniformity of measures in physical apparatus as will promote interchangeability of their parts.

The president appointed the following members as this committee:

S. P. Langley, *Chairman*, T. C. Mendenhall, E. C. Pickering.

The president and home secretary explained the condition of the printing of the memoirs of the Academy. Mr. Gould moved that the committee on printing be directed to omit those memoirs that were not found to be in a form suitable for immediate printing. This was seconded by Mr. Morse and adopted by the Academy.

ABSTRACT OF TREASURER'S REPORT.

The home secretary read an abstract of a report of the treasurer, dated November 10, 1890. This report showed the following available balances:

General fund.....	\$622. 14
Bache fund.....	840. 25
Watson fund.....	2,920. 13
Draper fund.....	584. 69
Smith fund.....	1,181. 29
Total	6,148. 50

THE WATSON MEDAL.

Mr. Gould presented the following report from the board of trustees of the Watson fund, which was approved by the Academy:

Boston, November 12, 1890.

To the National Academy of Sciences:

The board of trustees of the Watson fund respectfully recommend to the Academy that a Watson medal be awarded to Dr. Arthur Auwers,

of Berlin, for his contributions to stellar astronomy, including his superintendency of the zone observations of the Astronomische Gesellschaft, his researches on variable proper motions, and his re-discussion of Bradley's observations.

The grounds for this award will be presented to the Academy in due time.

Very respectfully,

SIMON NEWCOMB.

B. A. GOULD.

ASAPH HALL.

The special session then adjourned.

RESOLUTIONS.

Mr. Gibbs offered the following resolutions, which were unanimously adopted by the Academy:

Resolved, That the thanks of the Academy be returned to the officers of the Boston Society of Natural History and of the Massachusetts Institute of Technology for the excellent accommodations which have done so much to render the meeting of the Academy successful as well as agreeable.

Resolved, That the Academy acknowledges, with grateful appreciation, the abounding hospitality of the president and fellows of Harvard University, and the opportunity which has been offered to its members to visit the beautiful collections and admirable equipment of the university.

Resolved, That the Academy returns thanks to the St. Botolph Club for the use of its club house, feeling that literature and art are the sisters of science.

Resolved, That the Academy, warmly sympathizing with the higher education of woman, gratefully appreciates the opportunity of visiting the Harvard Annex.

Resolved, That the invitation of the trustees of the Museum of Fine Arts was a delicate and graceful attention, which demands an expression of the sincere thanks of the Academy.

Resolved, That the Academy returns thanks to the Thursday Evening Club and to Mr. Montgomery Sears for the most agreeable invitation to meet with the club, an invitation the more acceptable in that an honored president of the Academy was also president of the Thursday Evening Club.

Resolved, That the hearty thanks of the Academy are tendered to the members of the local committee for their most efficient, thoughtful, and generous provision for the comfort and convenience of the members.

DEATH OF MEMBER.

The president announced the death of Prof. C. H. F. Peters, a member of the Academy, who died July 18, 1890, at Clinton, N. Y. Mr. Charles A. Schott was appointed to prepare the biographical memoir.

The Academy adjourned to meet in Washington on the third Tuesday in April, 1891.

Respectfully submitted.

O. C. MARSH,

President of the National Academy of Sciences.

APPENDICES.

APPENDIX A.

AN ACT to incorporate the National Academy of Sciences.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That Louis Agassiz, Massachusetts; J. H. Alexander, Maryland; S. Alexander, New Jersey; A. D. Bache, at large; F. A. P. Barnard, at large; J. G. Barnard, United States Army, Massachusetts; W. H. C. Bartlett, United States Military Academy, Missouri; U. A. Boyden, Massachusetts; Alexis Caswell, Rhode Island; William Chauvenet, Missouri; J. H. C. Coffin, United States Naval Academy, Maine; J. A. Dahlgren, United States Navy, Pennsylvania; J. D. Dana, Connecticut; Charles H. Davis, United States Navy, Massachusetts; George Engelmann, Saint Louis, Mo.; J. F. Frazer, Pennsylvania; Wolcott Gibbs, New York; J. M. Gilliss, United States Navy, District of Columbia; A. A. Gould, Massachusetts; B. A. Gould, Massachusetts; Asa Gray, Massachusetts; A. Guyot, New Jersey; James Hall, New York; Joseph Henry, at large; J. E. Hilgard, at large, Illinois; Edward Hitchcock, Massachusetts; J. H. Hubbard, United States Naval Observatory, Connecticut; A. A. Humphreys, United States Army, Pennsylvania; J. L. LeConte, United States Army, Pennsylvania; J. Leidy, Pennsylvania; J. P. Lesley, Pennsylvania; M. F. Longstreth, Pennsylvania; D. H. Mahan, United States Military Academy, Virginia; J. S. Newberry, Ohio; H. A. Newton, Connecticut; Benjamin Peirce, Massachusetts; John Rodgers, United States Navy, Indiana; Fairman Rogers, Pennsylvania; R. E. Rogers, Pennsylvania; W. B. Rogers, Massachusetts; L. M. Rutherford, New York; Joseph Saxton, at large; Benjamin Silliman, Connecticut; Benjamin Silliman, junior, Connecticut; Theodore Strong, New Jersey; John Torrey, New York; J. G. Totten, United States Army, Connecticut; Joseph Winlock, United States Nautical Almanac, Kentucky; Jeffries Wyman, Massachusetts; J. D. Whitney, California; their associates and successors duly chosen, are hereby incorporated, constituted, and declared to be a body corporate, by the name of the National Academy of Sciences.

SEC. 2. *And be it further enacted,* That the National Academy of Sciences shall consist of not more than fifty ordinary members, and the said corporation hereby constituted shall have power to make its own

organization, including its constitution, by-laws, and rules and regulations; to fill all vacancies created by death, resignation, or otherwise; to provide for the election of foreign and domestic members, the division into classes, and all other matters needful or usual in such institution, and to report the same to Congress.

SEC. 3. *And be it further enacted*, That the National Academy of Sciences shall hold an annual meeting at such place in the United States as may be designated, and the Academy shall, whenever called upon by any Department of the Government, investigate, examine, experiment, and report upon any subject of science or art, the actual expense of such investigations, examinations, experiments, and reports to be paid from appropriations which may be made for the purpose, but the Academy shall receive no compensation whatever for any services to the Government of the United States.

Approved, March 3, 1863.

AN ACT to amend the act to incorporate the National Academy of Sciences.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the act to incorporate the National Academy of Sciences, approved March three, eighteen hundred and sixty-three, be, and the same is hereby, so amended as to remove the limitation of the number of ordinary members of said Academy as provided in said act.

Approved, July 14, 1870.

DEPARTMENT OF STATE, *June 10, 1882.*

True copies.

SEVELLON A. BROWN,
Chief Clerk.

AN ACT to authorize the National Academy of Sciences to receive and hold trust funds for the promotion of science, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the National Academy of Sciences, incorporated by the act of Congress approved March third, eighteen hundred and sixty-three, and its several supplements, be, and the same is hereby, authorized and empowered to receive bequests and donations, and hold the same in trust, to be applied by the said Academy in aid of scientific investigations, and according to the will of the donors.

Approved, June 20, 1884.

DEPARTMENT OF STATE, *June 24, 1884.*

A true copy.

SEVELLON A. BROWN,
Chief Clerk.

APPENDIX B.

CONSTITUTION AND RULES OF THE NATIONAL ACADEMY OF SCIENCES.

As amended and adopted April 17, 1872, and further amended April 20, 1875, April 21, 1881, April 19, 1882, April 18, 1883, and April 19, 1888.

PREAMBLE.

Empowered by the act of incorporation enacted by Congress, and approved by the President of the United States, on the 3d day of March, A. D. 1863, and in conformity with the amendment to said act, approved July 14, 1870, the National Academy of Sciences adopts the following amended constitution and rules :

ARTICLE I. OF MEMBERS.

SEC. 1. The Academy shall consist of members, honorary members, and foreign associates. Members must be citizens of the United States.

SEC. 2. Members who, from age or inability to attend the sessions of the Academy, wish to resign the duties of active membership, may, at their own request, be transferred to the roll of honorary members by a vote of the Academy.

SEC. 3. The Academy may elect fifty foreign associates.

SEC. 4. Honorary members and foreign associates shall have the privilege of attending the meetings, and of reading and communicating papers to the Academy, but shall take no part in its business, shall not be subject to its assessments, and shall be entitled to a copy of the publications of the Academy.

ARTICLE II.—OF THE OFFICERS.

SEC. 1. The officers of the Academy shall be a president, a vice-president, a foreign secretary, a home secretary, and a treasurer, all of whom shall be elected for a term of six years, by a majority of votes present, at the first stated session after the expiration of the current terms, provided that existing officers retain their places until their successors are elected. In case of a vacancy, the election for six years shall be held in the same manner at the session when such vacancy occurs, or at the next stated session thereafter, as the Academy may direct. A vacancy in the office of treasurer or home secretary may, however, be filled by appointment of the president of the Academy until the next stated session of the Academy.

SEC. 2. The officers of the Academy, together with six members to be elected by the Academy at the first stated session in each year, shall constitute a council for the transaction of such business as may be assigned to them by the constitution of the Academy.

SEC. 3. The president of the Academy, or, in case of his absence or inability to act, the vice-president, shall preside at the meetings of the Academy and of the council, shall name all committees except such as are otherwise especially provided for; shall refer investigations required by the Government of the United States to members especially conversant with the subjects, and report thereon to the Academy at its session next ensuing; and, with the council, shall direct the general business of the Academy.

It shall be competent for the president, in special cases, to call in the aid, upon committees, of experts or men of special attainments, not members of the Academy.

SEC. 4. The foreign and home secretaries shall conduct the correspondence proper to their respective departments, advising with the president and council in cases of doubt, and reporting their action to the Academy at one of the stated sessions in each year.

It shall be the duty of the home secretary to give notice to the members of the place and time of all meetings, of all nominations for membership, and of all proposed amendments to the constitution.

The minutes of each session shall be duly engrossed before the next stated session, under the direction of the home secretary.

SEC. 5. The treasurer shall attend to all receipts and disbursements of the Academy, giving such bond and furnishing such vouchers as the council may require. He shall collect all dues from members, and keep a set of books showing a full account of receipts and disbursements. He shall present a general report at the April session. He shall be the custodian of the corporate seal of the Academy.

ARTICLE III.—OF THE MEETINGS.

SEC. 1. The Academy shall hold one stated session in each year, in the city of Washington, on the third Tuesday in April, and another may be held at such place and time as the council shall determine.

Special sessions of the Academy may be called, by order of eight members of the council, at such place and time as may be designated in the call.

Scientific sessions of the Academy may be held at times and places to be designated by a majority of the council.

SEC. 2. The names of the members present at each daily meeting shall be recorded in the minutes; and the members present at any meeting shall constitute a quorum for the transaction of business.

SEC. 3. Scientific meetings of the Academy, unless otherwise ordered by a majority of the members present, shall be open to the public; those of the transaction of business, closed.

SEC. 4. The stated meetings of the council shall be held during the stated or special sessions of the Academy. Special meetings may be convened at the call of the president and two members of the council, or of four members of the council.

SEC. 5. No member who has not paid his dues shall take part in the business of the Academy.

ARTICLE IV.—OF ELECTIONS AND RESIGNATIONS.

SEC. 1. All elections shall be by ballot, and each election shall be held separately, unless otherwise ordered by this constitution.

SEC. 2. The time for holding an election for officers shall be fixed by the Academy at least one day before the election is held.

SEC. 3. The six additional members of the council shall be elected on any day after the first of the first stated session in each year, by each voter inscribing six names on his ballot, and those six who have received more votes than any others shall be declared elected. If two or more names have received the lowest number of votes that would elect, additional balloting shall be had for as many members as remain each time to be elected until the number is full.

The term of the members so elected shall commence at the close of the session at which they are elected, and continue until the close of the first stated session in the next year.

SEC. 4. Nominations of members may be made in writing, signed by any five members of the Academy, at any stated session, to be voted on at the next stated session held in Washington, and each nomination shall, at the time of election, be accompanied by a written list of the original works of the nominee.

SEC. 5. Elections for membership shall be held in the following manner: Each member may inscribe on a ballot not more than five names of nominees selected from the list. Absent members may send such ballots to the home secretary. From the seven names receiving the highest number of votes in this preference ballot, the members present may proceed to elect new members in the following manner: At each ballot, each member present may vote for not exceeding three persons, and the person receiving the highest number of votes shall be declared elected, provided that he received two-thirds of the votes cast and that his name appear on not less than twenty ballots; and provided further, that the number of members of the Academy be not already one hundred or over, in which case to be declared to be elected he must receive four-fifths of the votes cast, and his name must appear on at least twenty-five ballots.

Should several candidates have the same minimum number of votes on the preference list, the requisite number for completing the list shall be selected from them by a two-thirds vote of the members present.

Election of members shall be held only at the regular stated session of each year held in Washington, and not more than five members shall be elected at that session.

Before and during elections, a discussion of the merits of nominees will be in order.

The election of members may be suspended at any time by a majority vote of the members present.

SEC. 6. Every member elect shall accept his membership, personally or in writing, before the close of the next stated session after the date of his election. Otherwise, on proof that the secretary has formally notified him of his election, his name shall not be entered on the roll of members.

SEC. 7. Foreign associates may be nominated by a committee of five members to be appointed for that purpose by the president, and elected at any stated session by a two-thirds vote of the members present. The election shall be had by each member indicating on a ballot those names for which he votes, and those nominees whose names appear on two-thirds of the ballots shall be elected.

SEC. 8. A diploma, with the corporate seal of the Academy and the signatures of the officers, shall be sent by the appropriate secretary to each member on his acceptance of his membership, and to foreign associates on their election.

SEC. 9. Resignations shall be addressed to the president and acted on by the Academy.

ARTICLE V.—OF SCIENTIFIC COMMUNICATIONS, PUBLICATIONS, AND REPORTS.

SEC. 1. Communications on scientific subjects shall be read at scientific meetings of the Academy, and papers by any member may be read by the author or by any other member, notice of the same having been previously given to the secretary.

SEC. 2. Any member of the Academy may read a paper from a person who is not a member, and shall not be considered responsible for the facts or opinions expressed by the author, but shall be held responsible for the propriety of the paper.

Persons who are not members may read papers on invitation of the president, with the advice of the council.

SEC. 3. The Academy may provide for the publication, under the direction of the council, of proceedings, memoirs, and reports.

SEC. 4. Propositions for investigations or reports by the Academy shall be submitted to the council for approval, except those requested by the Government of the United States, which shall be acted on by the president, who will in such cases report their results to the Government as soon as obtained, and to the Academy at its next following stated session.

SEC. 5. The advice of the Academy shall be, at all times, at the disposition of the Government, upon any matter of science or art within its scope.

SEC. 6. An annual report to be presented to Congress shall be prepared by the president, and before its presentation, submitted by him, first to the council, and afterwards to the Academy, at one of the stated sessions.

SEC. 7. Medals and prizes may be established, and the means of bestowing them accepted by the Academy, upon the recommendation of the council, by whom all the necessary arrangements for their establishment and award shall be made.

Bequests and trusts having for their object the advancement of science may also be accepted and administered by the Academy.

ARTICLE VI.—OF THE PROPERTY OF THE ACADEMY.

SEC. 1. All investments shall be made by the treasurer, in the corporate name of the Academy, in stocks of the United States; or, with the approval of the council, in State bonds, or first mortgage bonds, or real estate. The treasurer shall have authority, with the approval of the council, to sell and transfer any United States bonds held by him in the corporate name of the Academy.

SEC. 2. No contract shall be binding upon the Academy which has not been first approved by the council.

SEC. 3. The assessments required for the support of the Academy shall be fixed by the Academy on the recommendation of the council.

ARTICLE VII.—OF ADDITIONS AND AMENDMENTS.

Additions and amendments to the constitution shall be made only at a stated session of the Academy. Notice of a proposition for such a change must be given at a stated session, and shall be referred to the council, which may amend the proposition, and shall report thereon to the Academy at the same session. Its report shall be considered by the Academy in committee of the whole for amendment.

The proposition as amended, if adopted in committee of the whole, shall be voted on at the next stated session, and if it receives two-thirds of the votes cast, it shall be declared adopted.

Absent members may send their votes on pending changes in the constitution to the home secretary in writing, and such votes shall be counted as if the member were present.

RULES.

I. In the absence of any officer, a member shall be chosen to perform his duties temporarily, by a plurality of *viva voce* votes, upon open nominations.

II. On the first day of each stated session, immediately after calling the roll of members, a recording secretary shall be elected by a plurality of members present to assist the home secretary in keeping the records of the session.

III. The accounts of the treasurer shall be referred to an auditing committee of three members, to be appointed by the president at the meeting at which the accounts are presented, which committee shall report before the close of that session, and shall then be discharged.

The bonds, securities, and other property owned or held in trust by the Academy shall be inspected and verified by a committee to be annually appointed by the president. The report of this committee shall be presented to the Academy at its first stated session in each year, and referred with the accounts to the auditing committee.

IV. A committee of arrangements consisting of five members shall be appointed by the president for each stated session of the Academy. This committee shall meet not less than two weeks previous to each session. It shall be in session during the meetings to make arrangements for the reception of the members; to arrange the business of each day; to receive the titles of papers, reports, etc.; and to arrange the order of reading, and, in general, to attend to all business and scientific arrangements.

It shall be the duty of the committee of arrangements to fix the length of time to be devoted to reading of all papers submitted, and to limit the time to be occupied in their discussion.

V. At the meetings, the order of business shall be as follows:

1. Chair taken by the president, or, in his absence, by the vice-president.
2. Roll of members called by home secretary.
3. Minutes of the preceding meeting read and approved.
4. Stated business.
5. Reports of president, secretaries, treasurer, and committees.
6. Business from council.
7. Other business.
8. On the last days of the session, the rough minutes of that day's proceedings are to be read for correction.

VI. The rules of order of the Academy shall be those of the Senate of the United States, unless suspended by unanimous consent.

VII. Unless otherwise ordered by the Academy, the scientific meetings shall be convened at noon.

VIII. The death of members shall be announced by the president on the last day of any session, when a member shall be selected by the president to furnish a biographical notice of the deceased at the next stated session. If such notice be not then furnished, another member may be selected by the president in place of the first, and so on until the duty is performed.

IX. The secretaries will receive memoirs at any time, and report the date of their reception at the next session. But no memoir shall be published unless it has been read before the Academy.

X. Memoirs shall date in the records of the Academy from the date of their presentation to the Academy, and the order of their presenta-

tion shall be that in which they were registered, unless changed by consent of the author.

XI. Papers from persons not members, read before the Academy, and intended for publication; shall be referred, at the meeting at which they are read, to a committee of members competent to judge whether the paper is worthy of publication. Such committee shall report to the Academy as early as practicable, and not later than the next stated session.

XII. An annual of the Academy shall be prepared and published by the secretaries.

XIII. The printing of the Academy shall be under the charge of a committee of publication, to consist of the home secretary and four other members to be named by the president, with the advice and consent of the council.

XIV. The annual report of the Academy may be accompanied by a memorial to Congress in regard to such investigations and other subjects as may be deemed advisable, recommending appropriations therefor when necessary.

XV. The proper secretary shall acknowledge all donations made to the Academy, and shall report them at the next stated session.

XVI. The books, apparatus, archives, and other collections of the Academy shall be deposited in some safe place in the city of Washington. A list of the articles so deposited shall be kept by the home secretary, who is authorized to employ a clerk to take charge of them.

XVII. A stamp corresponding to the corporate seal of the Academy shall be kept by the secretaries, who shall be responsible for the due marking of all books and other objects to which it is applicable.

Labels, and other proper marks of similar device, shall be placed upon objects not admitting of the stamp.

XVIII. The treasurer is authorized to defray, when approved by the president, all the proper expenses of committees appointed to make scientific investigations at the request of departments of the Government, and in each case to look to the department requesting the investigation for reimbursement to the Academy.

XIX. Nominations for membership should state the full name, residence, the official position, and the special scientific studies of the candidate. A form of nomination shall be prepared by the home secretary.

XX. At least sixty days before the election, the members signing the nomination should furnish the home secretary with a sufficient number of printed copies of the list of the more important original works of the nominee to enable the secretary to furnish a copy to each member of the Academy.

XXI. Ballots for election of members may be sent by sealing them up in a blank envelope, and inclosing this in another, across the back of which is written the name of the sender, and which is addressed to the home secretary; such envelopes will be opened only by the tellers.

XXII. All discussions as to the claims and qualifications of nominees at meetings of the Academy will be held strictly confidential, and remarks and criticisms then made may be communicated to no person who was not a member of the Academy at the time of the discussion.

XXIII. Any rule of the Academy may be amended, suspended, or repealed on the written motion of any two members, signed by them, and presented at a stated session of the Academy, provided the same shall be approved by a majority of the members present.

By a resolution adopted January 12, 1864, the president is, *ex officio*, a member of all Government committees of the Academy.

APPENDIX C.

ORGANIZATION OF THE ACADEMY, 1890.

	Expiration of term.
MARSH, O. C., <i>President</i>	April, 1895
LANGLEY, S. P., <i>Vice-President</i>	April, 1895
GIBBS, WOLCOTT, <i>Foreign Secretary</i>	April, 1892
HALL, A., <i>Home Secretary</i>	April, 1895
BILLINGS, JOHN S., <i>Treasurer</i>	April, 1893

ADDITIONAL MEMBERS OF COUNCIL, 1890-'91.

BRUSH, G. J.	NEWCOMB, S.
GOULD, B. A.	REMSEN, IRA.
MEIGS, M. C.	WALKER, F. A.

COMMITTEES OF THE ACADEMY.

On Ways and Means to Provide a Fund for the Academy.

ROGERS, FAIRMAN, <i>Chairman</i> .	MARSH, O. C.
CHANDLER, C. F.	MITCHELL, S. WEIR.
PUMPELLY, R.	

On Weights, Measures, and Coinage.

GIBBS, WOLCOTT.	NEWCOMB, S.
HILGARD, J. E.	NEWTON, H. A.
MEIGS, M. C.	PEIRCE, C. S.
TROWBRIDGE, W. P.	

On the Election of Foreign Associates.

GIBBS, WOLCOTT, <i>Chairman</i> .	GOULD, B. A.
DANA, J. D.	HALL, A.
NEWCOMB, S.	

On Reserving Public Lands on and near Mount Whitney, California, for Scientific Purposes.

LANGLEY, S. P., <i>Chairman</i> .	BREWER, W. H.
POWELL, J. W.	

On Publication.

THE HOME SECRETARY.	MENDENHALL, T. C.
BILLINGS, J. S.	NEWCOMB, S.
POWELL, J. W.	

On Publications of the Academy.

GILL, T.

On the Relation of the Academy to the Government.

THE PRESIDENT.
VICE-PRESIDENT.
SECRETARIES.

BRUSH, G. J.
HILGARD, J. E.
MEIGS, M. C.

POWELL, J. W.

On Investigation of the North Magnetic Pole.

LANGLEY, S. P., *Chairman.*
ABBOT, H. L.
TROWBRIDGE, W. P.

MAYER, A. M.
SCHOTT, C. A.
TROWBRIDGE, J.

CARPMAEL, C.

On Uniformity of Measures in Physical Apparatus.

LANGLEY, S. P., *Chairman.*

MENDENHALL, T. C.

PICKERING, E. C.

TRUST FUNDS.

Board of Direction of the Bache Fund.

DANA, J. D.

GIBBS, W.

HILGARD, J. E.

Board of Trustees of the Watson Fund.

NEWCOMB, S., *Chairman.*

GOULD, B. A.

HALL, A.

The Henry Draper Fund.

BARKER, G. F., *Chairman.*
GIBBS, W.

NEWCOMB, S.
WRIGHT, A. W.

YOUNG, C. A.

The J. Lawrence Smith Fund

GIBBS, WOLCOTT, *Chairman*
BRUSH, G. J.

HALL, A.
PUMPELLE, R.

RUTHERFURD, L. M.

MEMBERS OF THE NATIONAL ACADEMY OF SCIENCES, JANUARY, 1891.

		Date of election.
ABBE, CLEVELAND	Washington, D. C.	1879
ABBOT, HENRY L., U. S. A.	Army Building, New York City.	1872
AILEN, J., ASAPH	American Museum, New York City.	1876
BARKER, GEORGE F.	3909 Locust St., Philadelphia, Pa.	1876
BARTLETT, WILLIAM H. C.	75 Locust Hill Ave., Yonkers, N. Y.	—
BELL, A. GRAHAM	Washington, D. C.	1883
BILLINGS, JOHN S., U. S. A.	Washington, D. C.	1883
BOSS, LEWIS	Albany, N. Y.	1889
BOWDITCH, HENRY P.	Cambridge, Mass.	1887
BREWER, WILLIAM H.	New Haven, Conn.	1880
BROOKS, W. K.	Johns Hopkins University, Baltimore, Md.	1884
BROWN-SEQUARD, CHARLES E.	Paris, France.	1868
BRUSH, GEORGE J.	New Haven, Conn.	1868
CASEY, THOMAS L., U. S. A.	Washington, D. C.	1890
CHANDLER, CHARLES F.	New York City.	1874
CHANDLER, SETH C.	16 Craigie St., Cambridge, Mass.	1888
CHITTENDEN, RUSSELL H.	New Haven, Conn.	1890
COMSTOCK, CYRUS B., U. S. A.	Whitestone, Long Island, N. Y.	1884
COOKE, JOSIAH P.	Cambridge, Mass.	1872
COPE, EDWARD D.	2100 Pine St., Philadelphia, Pa.	1872
COUES, ELLIOTT	Washington, D. C.	1877
CRAFTS, JAMES M.	Commonwealth ave., Boston, Mass.	1872
DANA, EDWARD S.	New Haven, Conn.	1884
DANA, JAMES D.	New Haven, Conn.	—
DAVIDSON, GEORGE	San Francisco, Cal.	1874
DUTTON, CLARENCE E., U. S. A.	Washington, D. C.	1884
FARLOW, W. G.	Cambridge, Mass.	1879
FERREL, WILLIAM	1641 Broadway, Kansas City, Mo.	1868
GENTH, FREDERICK A.	W. Philadelphia, Pa.	1872
GIBBS, JOSIAH WILLARD	New Haven, Conn.	1879
GIBBS, WOLCOTT	Newport, R. I.	—
GILBERT, GROVE K.	Washington, D. C.	1883
GILL, THEODORE N.	Washington, D. C.	1873
GOODALE, GEORGE L.	Cambridge, Mass.	1890
GOODE, G. BROWN	Washington, D. C.	1888
GOULD, BENJAMIN A.	Cambridge, Mass.	—
HAGUE, ARNOLD	U. S. Geological Survey, Washington, D. C.	1885
HALL, ASAPH, U. S. N.	Washington, D. C.	1875
HALL, JAMES	Albany, N. Y.	—
HASTINGS, CHARLES S.	New Haven, Conn.	1889
HILGARD, EUGENE W.	Oakland, Cal.	1872
HILGARD, JULIUS E.	Washington, D. C.	—
HILL, GEORGE W.	Washington, D. C.	1874
HILL, HENRY B.	Cambridge, Mass.	1883
HOLDEN, EDWARD S.	San José, California.	1885

		Date of election.
HUNT, T. STERRY.....	Montreal, Canada.	1873
HYATT, ALPHEUS.....	Soc. of Nat. History, Boston, Mass.	1875
JACKSON, CHARLES L.....	Cambridge, Mass.	1883
JOHNSON, SAMUEL W.....	New Haven, Conn.	1866
KING, CLARENCE.....	62 Cedar St., New York City.	1876
LANGLEY, SAMUEL P.....	Washington, D. C.	1876
LEIDY, JOSEPH.....	2125 Spruce St., Philadelphia, Pa.	—
LESLEY, J. PETER.....	1008 Clinton St., Philadelphia, Pa.	—
LECONTE, JOHN.....	Berkeley, Cal.	1878
LECONTE, JOSEPH.....	Berkeley, Cal.	1875
LOVERING, JOSEPH.....	Cambridge, Mass.	1873
MARSH, O. C.....	New Haven, Conn.	1874
MAYER, ALFRED M.....	Hoboken, N. J.	1872
MEIGS, MONTGOMERY C., U. S. A.....	Washington, D. C.	1865
MENDENHALL, THOMAS C.....	Washington, D. C.	1887
MICHAEL, ARTHUR.....	Somerville, Mass.	1889
MICHELSON, ALBERT A.....	Worcester, Mass.	1888
MITCHELL, HENRY.....	Boston, Mass.	1885
MITCHELL, S. WEIR.....	1524 Walnut St., Philadelphia, Pa.	1865
MORSE, EDWARD S.....	Salem, Mass.	1876
MORTON, HENRY.....	Hoboken, N. J.	1874
NEWBERRY, J. S.....	New York City.	—
NEWCOMB, SIMON, U. S. N.....	Washington, D. C.	1869
NEWTON, H. A.....	New Haven, Conn.	—
NEWTON, JOHN, U. S. A.....	New York City.	1876
OLIVER, JAMES E.....	Ithaca, N. Y.	1872
PACKARD, A. S.....	Providence, R. I.	1872
PEIRCE, CHARLES S.....	U. S. Coast Survey, Washington, D. C.	1877
PICKERING, EDWARD C.....	Cambridge, Mass.	1873
POWELL, JOHN W.....	Washington, D. C.	1880
PUMPELLY, RAPHAEL.....	Gibbs Ave., Newport, R. I.	1872
PUTNAM, FREDERICK W.....	Cambridge, Mass.	1885
REMSSEN, IRA.....	Johns Hopkins University, Baltimore, Md.	1882
ROGERS, FAIRMAN.....	147 S. Fourth St., Philadelphia, Pa.	—
ROGERS, WILLIAM A.....	Waterville, Me.	1885
ROOD, OGDEN N.....	New York City.	1865
ROWLAND, HENRY A.....	Johns Hopkins University, Baltimore, Md.	1881
RUTHERFURD, LEWIS M.....	175 Second Ave., New York City.	—
SCHOTT, CHARLES A.....	Washington, D. C.	1872
SCUDDER, SAMUEL H.....	Cambridge, Mass.	1877
SELLERS, WILLIAM.....	1600 Hamilton St., Philadelphia, Pa.	1873
SMITH, RICHMOND M.....	New York City.	1890
SMITH, SIDNEY I.....	New Haven, Conn.	1884
TROWBRIDGE, JOHN.....	Cambridge, Mass.	1878
TROWBRIDGE, WILLIAM P.....	New York City.	1872
TRUMBULL, J. H.....	Hartford, Conn.	1872
VERRILL, A. E.....	New Haven, Conn.	1872
WALKER, FRANCIS A.....	Boston, Mass.	1878
WATSON, SERENO.....	Cambridge, Mass.	1889
WHITE, CHARLES A.....	Washington, D. C.	1889
WOOD, HORATIO C.....	1925 Chestnut St., Philadelphia, Pa.	1879
WRIGHT, ARTHUR W.....	New Haven, Conn.	1881
YOUNG, CHARLES A.....	Princeton, N. J.	1872

HONORARY MEMBERS.

AGASSIZ, ALEXANDER.....	<i>Cambridge, Mass.</i>
LONGSTRETH, MIERS F.....	<i>Derby, Pa.</i>
LYMAN, THEODORE.....	<i>Brookline, Mass.</i>

DECEASED MEMBERS.

	Date of death.
*AGASSIZ, LOUIS.....	Dec. 14, 1873
*ALEXANDER, J. H.....	March 2, 1867
*ALEXANDER, STEPHEN.....	June 25, 1883
*BACHE, ALEXANDER DALLAS.....	Feb. 14, 1867
*BAIRD, SPENCER F.....	Aug. 19, 1887
BARNARD, J. G.....	May 14, 1882
BARNARD, F. A. P.....	April 27, 1889
*CASWELL, ALEXIS.....	Jan. 8, 1887
*CHAUVENET, WILLIAM.....	Dec. 13, 1870
CLARK, HENRY JAMES.....	July 1, 1873
COFFIN, JAMES H.....	Jan. 6, 1873
COFFIN, J. H. C.....	Jan. 8, 1890
COOK, GEORGE H.....	Sept. 22, 1889
*DALTON, J. C.....	Feb. 2, 1889
DAVIS, CHARLES H.....	Feb. 18, 1877
*DRAPER, HENRY.....	Nov. 20, 1882
*DRAPER, JOHN W.....	Jan. 4, 1882
*EADS, JAMES B.....	Mar. 8, 1887
ENGELMANN, GEORGE.....	Feb. 11, 1884
*FRAZER, JOHN FRIES.....	Oct. 12, 1872
*GABB, WILLIAM M.....	May 30, 1878
GILLISS, JAMES MELVILLE.....	Feb. 9, 1865
*GOULD, AUGUSTUS A.....	Sept. 15, 1866
*GRAY, ASA.....	Jan. 30, 1888
*GUYOT, ARNOLD.....	Feb. 8, 1884
HAYDEN, F. V.....	Dec. 22, 1887
*HENRY, JOSEPH.....	May 13, 1878
*HADLEY, JAMES.....	Aug. 1, 1864
*HITCHCOCK, EDWARD.....	Feb. 27, 1864
*HOLBROOK, J. E.....	Sept. 8, 1871
*HUBBARD, J. S.....	Aug. 16, 1863
*HUMPHREYS, A. A.....	Nov. 28, 1883
*HALDEMAN, S. S.....	Sept. 10, 1880
*KIRTLAND, JARED P.....	Dec. 10, 1877
*LANE, J. HOMER.....	——, 1880
*LECONTE, JOHN L.....	Nov. 15, 1883
*LESQUEREUX, LEO.....	Oct. 25, 1889
*LOOMIS, ELIAS.....	Aug. 16, 1889
*MAHAN, D. H.....	Sept. 16, 1871
*MARSH, G. P.....	July 23, 1882
*MEEK, F. B.....	Dec. 21, 1877
*MORGAN, LEWIS H.....	Dec. 14, 1881
*NORTON, WILLIAM A.....	Sept. 21, 1883
PETERS, C. H. F.....	July 18, 1890
*POURTALES, L. F.....	July 17, 1880
RODGERS, JOHN.....	May 5, 1882
ROGERS, ROBERT E.....	Sept. 7, 1884
*ROGERS, WILLIAM B.....	May 30, 1882
*SAXTON, JOSEPH.....	Oct. 26, 1873
*SILLIMAN, BENJ., Sr.....	Nov. 24, 1864

	Date of death.
SILLIMAN, BENJ., JR.	Jan. 14, 1885
*SMITH, J. LAWRENCE	Oct. 12, 1883
*STIMPSON, WILLIAM	May 26, 1873
*STRONG, THEODORE	Feb. 1, 1869
*SULLIVANT, W. S.	April 30, 1873
*TORREY, JOHN	March 10, 1873
*TOTTEN, J. G.	April 22, 1864
*TUCKERMAN, EDWARD	March 15, 1886
*WARREN, G. K.	Aug. 8, 1882
*WATSON, JAMES C.	Nov. 23, 1880
*WINLOCK, JOSEPH	Jan. 11, 1875
*WOODWARD, J. J., U. S. A.	Aug. 17, 1884
WORTHEN, A. H.	May 6, 1888
*WYMAN, JEFFRIES	Sept. 4, 1874

FOREIGN ASSOCIATES.

BUNSEN, ROBERT W.	Heidelberg.
AIRY, SIR GEORGE B.	Greenwich.
OWEN, SIR RICHARD	London.
BURMEISTER, C. H. C.	Buenos Ayres.
STRUVE, OTTO VON	Pulkova.
ADAMS, J. C.	Cambridge.
CAYLEY, ARTHUR	Cambridge.
HELMHOLTZ, BARON H. VON	Berlin.
PASTEUR, LOUIS	Paris.
STOKES, SIR GEORGE G.	Cambridge.
SYLVESTER, J. J.	Oxford.
HOOKE, SIR J. D.	Kew.
THOMPSON, SIR WILLIAM	Glasgow.
AUWERS, ARTHUR	Berlin.
BERTRAND, J. L. F.	Paris.
HUXLEY, T. H.	London.
VIRCHOW, RUDOLPH VON	Berlin.
BERTHELOT, M. P. E.	Paris.
DE CANDOLLE, ALPHONSE	Geneva.
KÖLLIKER, ALBERT VON	Würzburg.
RICHTHOFEN, F. VON	Berlin.
HOEMANN, A. W.	Berlin.
IBAÑEZ, CARLOS	Madrid.

DECEASED FOREIGN ASSOCIATES.

SIR WM. ROWAN HAMILTON.
 CARL ERNST VON BAER.
 HENRY MILNE-EDWARDS.
 MICHAEL FARADAY.
 L. ELIE DE BEAUMONT.
 SIR DAVID BREWSTER.
 G. A. A. PLANA.
 F. W. A. ARGELANDER.
 FRIEDRICH WÖHLER.
 J. B. DUMAS.
 J. B. J. D. BOUSSINGAULT.
 M. E. CHEVREUL.
 MICHAEL CHASLES.

SIR RODERICK I. MURCHISON.
 VICTOR REGNAULT.
 H. W. DOVE.
 C. A. F. PETERS.
 JUSTUS VON LIEBIG.
 ALEXANDER BRAUN.
 JOACHIM BARRANDE.
 ADOLPHE WÜRTZ.
 THEODORE VON OPPOLZER.
 G. R. KIRCHOFF.
 RUDOLPH CLAUSIUS.
 JAMES P. JOULE.

* Biographical notices have been presented of those designated by a *.

APPENDIX D.

PRELIMINARY REPORT ON THE INVESTIGATION OF THE NORTH MAGNETIC POLE.

[Correspondence.]

THE NATIONAL ACADEMY OF SCIENCES,
Washington, D. C., January 8, 1891.

SIR: I have the honor to transmit to you, herewith, a preliminary report made by a committee of the National Academy of Sciences, in accordance with a request contained in your communication of May 22, 1890. The questions relating to the North Magnetic Pole thus submitted to the Academy require more time for examination than was at first expected; but the investigation is still in progress, and I trust I may be able to transmit to you the complete report at an early day.

Very respectfully,

O. C. MARSH,
President of the National Academy of Sciences.

The SECRETARY OF THE TREASURY.

TREASURY DEPARTMENT, *May 22, 1890.*

SIR: I have the honor to forward herewith a copy of a letter from the Superintendent of the Coast and Geodetic Survey, of April 28, 1890, containing a request for the appointment by you of a committee composed of members of the National Academy of Sciences, or others familiar with the problems involved, to formulate a plan or scheme for a systematic search for the North Magnetic Pole.

As this Department may be called upon, through the Coast and Geodetic Survey, to aid in an exploration of the region containing this pole, and in view of the fact that the organic act under which the Academy exists declares that it shall, whenever called upon by any Department of the Government, report upon any subject of science or art, I respectfully request the appointment of a committee which shall make report as desired in the letter herewith.

Respectfully, yours,

GEO. L. BATCHELLER,
Acting Secretary.

Prof. O. C. MARSH,
President, National Academy of Sciences, New Haven, Conn.
S. Mis. 60—3

UNITED STATES COAST AND GEODETIC SURVEY,
Washington, D. C., April 28, 1890.

SIR: The importance of a re-determination of the geographical position of the North Magnetic Pole has long been recognized by all interested in the theory of the earth's magnetism or its application. The point as determined by Ross in the early part of this century was not located with that degree of accuracy which modern science demands and permits, and besides it is altogether likely that its position is not a fixed one. Our knowledge of the secular variation of the magnetic needle would be greatly increased by better information concerning this magnetic pole, and in my judgment, it would be the duty of the Government to offer all possible encouragement to any suitable organized exploring expedition which might undertake to seek for this information. I am informed that such an expedition is now contemplated, and in order that such coöperation and encouragement as may be deemed advisable on the part of the Coast and Geodetic Survey may lead to the best possible results, I respectfully request that you communicate with the President of the National Academy of Sciences and ask that a committee composed of members of that body, or others who are familiar with the difficult problems involved, be appointed to formulate a plan or scheme for carrying out a systematic search for the North Magnetic Pole, in accordance with which, the Survey might render such assistance as may be considered possible and desirable.

I am, respectfully yours,

T. C. MENDENHALL,
Superintendent.

The SECRETARY OF THE TREASURY.

YALE UNIVERSITY,
New Haven, Conn., June 16, 1890.

SIR: I have the honor to acknowledge the receipt of your communication of May 22, 1890, containing a request for the appointment of a committee composed of members of the National Academy of Sciences, or others familiar with the problems involved, to formulate a plan for a systematic investigation of the North Magnetic Pole. A letter from the Superintendent of the Coast and Geodetic Survey, dated April 28, 1890, explaining more fully the object of the proposed exploration, was inclosed with your communication.

In reply, I have the honor to inform you that, in accordance with this request, I have appointed the following committee:

Prof. S. P. Langley, Secretary, Smithsonian Institution, *Chairman.*

Gen. Henry L. Abbot, U. S. Army.

Prof. William P. Trowbridge, Columbia College.

Prof. Alfred M. Mayer, Stevens Institute.

Prof. Charles A. Schott, U. S. Coast and Geodetic Survey.

Prof. John Trowbridge, Harvard University.

Prof. Charles Carpmael, University of Toronto.

The members of this committee are all familiar with the important questions to be solved, and will give the subject careful consideration.

Very respectfully,

O. C. MARSH,

President, National Academy of Sciences.

The SECRETARY OF THE TREASURY.

PRELIMINARY REPORT.

Boston, November 12, 1890.

SIR: Referring to your letter of the 16th of June and to its inclosure of a letter from the Secretary of the Treasury requesting the appointment of a committee to formulate a plan for the investigation of the Magnetic North Pole; and also inclosing a letter from the Superintendent of the Coast and Geodetic Survey; I have the honor to state that the committee has met, and that, having laid before them the communication in question, they have instructed me to report as follows:

The committee wish to state that, in their opinion, a knowledge of the exact position of the Magnetic North Pole is not so desirable as a study of the changes in the magnetic elements to be obtained from a cordon of stations, stretching from Alaska to Newfoundland, supplemented also by stations in Siberia, which might be established by the Russian Government in connection with that of the United States Government.

Since, however, the language of the communications before the committee restricts the question to the best method of determining the exact position of the Magnetic North Pole, they feel that more definite information in regard to the nature of the country in the region to be investigated should be laid before them. They believe that this information can best be obtained from those who have visited the region in question, and that the committee at present can merely make general suggestions recommending the occupation of a cordon of stations in the neighborhood of the line of dip of 89° ; for instance, on Prince of Wales Land, Boothia, near Point Ogle, and on the west side of Victoria Straits.

The committee, however, wish to emphatically state that they only recommend the above stations if they prove accessible. They have no information as to their accessibility, and they therefore express no opinion upon this point.

They desire to state that, in their opinion, whatever points are occupied, or whatever system is adopted, it is of importance to secure simultaneous observations at all the stations; and further that the character of the apparatus to be employed is of such consequence that the committee reserve the discussion of it for a later and more deliberate report.

Your obedient servant,

S. P. LANGLEY,

Chairman.

Prof. O. C. MARSH,

President of the National Academy of Sciences.

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IN THE SENATE OF THE UNITED STATES.

FEBRUARY 6, 1891.—Ordered to lie on the table and be printed.

Mr. CASEY presented the following

ADDRESS TO CONGRESS FROM THE NATIONAL BRICK MANUFACTURERS' ASSOCIATION OF THE UNITED STATES OF AMERICA, PRAYING THE PASSAGE OF THE TORREY BANKRUPT BILL.

INDIANAPOLIS, IND., *January 22, 1891.*

To the Congress of the United States:

The undersigned, the National Brick Manufacturers' Association of the United States of America, assembled in its fifth annual convention, respectfully urges upon your honorable bodies the passage of the Torrey bankrupt bill, and submits as reasons therefore the following:

(1) The members of this association, in their capacities as business men and manufacturers of bricks, which are extensively used in all the States of the Union, are interested in common with the persons, firms, and corporations to whom they sell their products in having their rights and responsibilities clearly and fully defined by one equitable, national uniform law, instead of by the varying laws of the States in which they do business.

(2) The members of this association, as the purchasers of large quantities of supplies, are interested in the passage of that bill in common with the persons, firms, and corporations from whom they purchase, as it will extend credit, prevent fraud, and restore and maintain confidence between business men, manufacturers, mechanics, and bankers.

(3) The members of this association, as consumers of commodities, are interested in the enactment of a law which will enable the sellers of goods to collect the price, or a part of it, of the goods sold, to the end that honest people who pay their debts will not have to pay in multiplied profits for the losses sustained by the sellers of goods to dishonest persons.

(4) The members of this association, in their dual capacities as debtors and creditors, are interested in the placing upon the statute books of a law which will be perfectly fair to them in those capacities, and therefore call upon the members of the Senate with one accord to defeat the resolution now upon the Senate Calendar providing for the striking from the above bill its involuntary features.

In view of the foregoing it is—

(1) *Resolved*, That the rights and responsibilities of business men participating in the commerce of the several States ought not to be changed whenever a State line is crossed, and that Congress is therefore called upon to enact at once a uniform national bankrupt act, as provided by the Federal Constitution.

(2) *Resolved further*, That the passage of a law which shall be a guaranty of fair dealing in commercial transactions on credit is designed in effect to increase the

capital invested in business by every business man, manufacturer, and mechanic in this, that it will give to him additional credit, open to him additional markets, and reduce the hazards of business.

(3) *Resolved further*, That it is an imperative duty upon the part of Congress to enact a law which shall give stability to commerce, because, in so doing, dishonest people will be prevented from fraudulently avoiding the payment of their debts, thereby leaving them, in effect, to be paid in multiplied profits by honest people who pay for what they consume.

(4) *Resolved further*, That dishonest men they are willing to purchase and sell under a law which gives to them reciprocal rights and responsibilities, and they therefore request the enactment of a bill containing provisions for both voluntary and involuntary bankruptcy.

(5) *Resolved further*, That this association expresses its belief that the Torrey bankrupt bill is of more importance to the whole people, without reference to residence, occupation, or political convictions, than any other measure now before Congress, and therefore respectfully and persistently requests that Congress shall consider and pass it at once.

A true copy from the records.

THEO. A. RANDALL,
Secretary.

O

IN THE SENATE OF THE UNITED STATES.

FEBRUARY 6, 1891.—Ordered to be printed.

Mr. EDMUNDS submitted the following

ORDER:

Ordered, That, unless otherwise directed, on and after Monday next, February 9, during the residue of the present session of the Senate, a recess shall be taken, excepting on Saturdays, from 6 o'clock p. m., to 8 o'clock p. m.



IN THE SENATE OF THE UNITED STATES.

FEBRUARY 6, 1891.—Presented, referred to the Committee on Post-Offices and Post-Roads, and ordered to be printed.

Mr. EVARTS submitted the following

RESOLUTION OF THE LEGISLATURE OF NEW YORK URGING THE PASSAGE OF THE JOINT RESOLUTION APPOINTING A COMMISSION TO MAKE INQUIRIES AS TO THE FACILITIES OF THE POST-OFFICE AT NEW YORK CITY AND REPORT UPON A PLAN, IF DEEMED EXPEDIENT, WHEREBY SUCH FACILITIES MAY BE INCREASED.

STATE OF NEW YORK.

IN SENATE, *Albany, January 29, 1891.*

Whereas, on January 17, 1891, the Hon. Roswell P. Flower introduced in the House of Representatives, at Washington, a joint resolution for the appointment of a commission, to consist of the Postmaster-General, the Secretary of the Treasury, the Attorney-General, ex-Postmaster-General James, and Charles A. Dana, whose duty it shall be to examine into the facilities of the New York post-office and report upon a plan, if deemed expedient, by which such postal facilities shall be increased; and,

Whereas on account of the great growth of the city of New York the present post-office has become entirely inadequate to meet the demands made upon it by a constantly growing business; and,

Whereas during the last fiscal year the gross receipts at this post-office were over \$6,000,000, and the net revenue to the United States Government was over \$3,770,000: Therefore, be it

Resolved (if the assembly concur), That the Senators and Representatives in Congress from this State be, and hereby are, respectfully urged to take all measures that they properly can to aid the adoption of the above resolution and the enactment of such other and further legislation as will be best calculated to afford to the city of New York, in the most speedy and ample manner, the increased postal facilities which her situation demands.

By order of the Senate:

JOHN S. KENYON, *Clerk.*

IN ASSEMBLY, *January 30, 1891.*

Concurred in without amendment.

By order:

CHAS. R. DE FREEST, *Clerk.*

IN THE SENATE OF THE UNITED STATES.

FEBRUARY 9, 1891.—Submitted, referred to the Committee to Audit and Control the Contingent Expenses of the Senate, and ordered to be printed.

Mr. MANDERSON presented the following

CONCURRENT RESOLUTION:

Resolved by the Senate (the House of Representatives concurring therein), That the Committee on Public Printing, with three members of the present Congress who are reëlected to the next Congress, to be appointed by the Speaker of the House of Representatives, or any subcommittee of said special joint committee, are hereby instructed to examine into the numbers printed of the various documents, reports, bills, and other papers published by order of Congress, or of either House thereof, and of the Congressional Record, and to report a bill in December next, making such reductions in the numbers and cost of printing and such changes and reduction in the distribution of said publications as they may deem expedient, with a report giving their reasons therefor; and that the said committee is also instructed to investigate the printing and binding for the executive departments executed at the Government Printing Office and at the branch printing offices and binderies in the various Departments, and report a bill in December next, making such reductions in expenses and imposing such checks as they may deem expedient, with a report giving their reasons therefor; and said committee is further instructed to make any other investigation calculated in their opinion to reduce the cost of the public printing, and report the result thereof; and the said committee is hereby authorized to employ a stenographer, to summon and examine experts and witnesses, and to call upon the heads of executive departments and the Public Printer for such information regarding the preceding matters as they may desire; and any expenses necessarily incurred in making the investigations aforesaid shall be defrayed from the contingent fund of the Senate upon vouchers approved by the chairman of the Committee on Printing.

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IN THE SENATE OF THE UNITED STATES.

FEBRUARY 10, 1891.—Submitted, referred to the Committee on Printing, and ordered to be printed.

Mr. HOAR submitted the following

A M E N D M E N T :

[Intended to be proposed to the resolution reported by Mr. MANDERSON, from the Committee on Printing, February 9, 1891.]

Amend the resolution by inserting after the words “with a report giving their reasons therefor” the following: “which bill shall include provision for the regular supply of the larger public, university, and college libraries of the United States with public documents.”

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IN THE SENATE OF THE UNITED STATES.

FEBRUARY 9, 1891.—Presented by Mr. Edmunds, referred to the Committee on Appropriations, to accompany amendment to bill H. R. 13462, and ordered to be printed.

LETTER

FROM

THE ATTORNEY-GENERAL,

RECOMMENDING

An appropriation for the transportation of judicial and other officers connected with the administration of justice in the Territory of Alaska between the seat of Government there and such places as courts may be held.

DEPARTMENT OF JUSTICE,
Washington, D. C., February 7, 1891.

SIR: Inclosed I hand you a copy of a letter just received from Judge Bugbee, of Alaska. The letter speaks for itself. It calls attention to needs in the administration of the laws in that District which seem to require a remedy. It seems to me a feasible suggestion that is made; that is, a law authorizing and requiring the Secretary of the Treasury to furnish to the officials of Alaska a revenue cutter for the transportation of the judicial and other officers from Sitka to Unga, Kodiak, and Oonalaska for the purpose of holding occasional courts there. Without something of this kind it is difficult to see how the laws can be enforced and life and property protected. There ought, I think, also to be some provision for paying the expenses of the judge when out in remote districts holding court. As you will see by this letter, the Comptroller holds that he is not authorized to allow accounts of the judge for expenses except when he is actually traveling. In other words, if he goes to a place and holds court and is under expense there, that he is not entitled to credit for his expenses. This, I think, should be otherwise.

Yours, truly,

W. H. H. MILLER,
Attorney-General.

Hon. GEO. F. EDMUNDS,
Chairman, United States Senate.

SITKA, ALASKA, *January 9, 1891.*

SIR: Referring to your letter of December 3 last (A. G. 11707-1890), briefly acknowledged by me on December 27, in which you request me to consult carefully with the United States attorney and the United States marshal and any other officials who may be at Sitka, and write you my views with reference to the necessities in the way of more or different court facilities in the Territory, notably Unga, Kodiak, and Oonalaska, the reasons why such necessities exist, and what remedy in my judgment would be available to repress crime and preserve order in the Territory, I would say that the whole subject has been on many and various occasions carefully considered and talked over by myself and the officials named by you, as well as the governor, clerk, court interpreter at Sitka, the deputy collector of customs, the United States commissioner and deputy marshal at Oonalaska, Dr. Sheldon Jackson, the commanders of the revenue cutters *Rush* and *Corwin*, and many citizens.

I believe that there is a great and urgent necessity for the holding of a term of court in western Alaska, either at Kodiak, Unga, or Oonalaska.

So strongly have I been impressed with this necessity that had it been in my power to execute it I should long before this, under the authority given the judge by section 3 of the organic act, have made an order directing the holding of a special session at one of the places mentioned. But it was not in my power, nor is it now, under existing circumstances with reference to transportation, which render necessary a voyage by the judge, clerk, marshal, district attorney, and interpreter from here to San Francisco, probable detention there, thence by sea to Oonalaska, long detention at that place, and a return by the same route, involving great expense to the Government, much individual outlay, and inconvenience, not to speak of peril, and prolonged absence from other and more pressing duties in this part of the Territory during the late spring and summer months, which cover the only season when western Alaska is accessible from here and when a jury can be obtained there.

Since the commencement of my term of office in December, 1889, there have been not less than four homicides reported as having occurred in western Alaska, but only one man has thus far been apprehended. He is now in jail here under indictment for murder. The other criminals have not been arrested. Lesser crimes in great numbers have undoubtedly been committed, but they have not been made public. The great expense and difficulty of communication and travel in that neighborhood, the lack of even mail facilities, the cost and labor of procuring and transporting witnesses, their reluctance to come here to testify, the want of proper officers to execute process, the uncertainty of punishment of criminals if arrested and brought so far for trial as Sitka, to which point they must necessarily be brought, all contribute to the failure to bring wrongdoers to justice, and consequently lead to disregard of the law and defiance of the Government. If fear of punishment deters from crime, little need be apprehended by lawless persons in western Alaska. The power and authority of the United States commissioner and deputy marshal at Oonalaska, without means of enforcing the law, stand for very little in that vicinity, except, perhaps, in the eyes of the helpless natives, whose crimes, when not petty and inspired by liquor illegally obtained, arise mostly from blind obedience to tribal laws and customs, which, however reprehensive in a civilized point of view, they have been taught to believe just and binding.

It is my opinion that a term of court at one of the places named and the speedy trial and conviction, if guilty, of such law-breakers as

might be brought to justice, would decrease crime just as surely as neglect to execute the laws would increase it. Lawless men will congregate where they feel the law will not reach them. Such a display of power to right wrongs and punish crimes would be wholesome in its effect not only upon the whites but upon the natives, to the latter of whom it would be a grand object lesson in Governmental supremacy. As it now is their few ideas in that regard have been derived mainly from an occasional visit of a revenue cutter, and they are probably in utter ignorance of the existence of a Territorial government.

Undoubtedly the executive and judicial powers under the organic act are ample for present purposes in western Alaska if means were afforded for their proper exercise, and, under them, life and property can be fully protected as, long ago, the Government promised to protect them.

But laying aside all questions of duty and expediency it would, I think, solely in an economic point of view, be to the advantage of the Government to have a term of court held in western Alaska every year or two; as, occasion might demand; as, for illustration, the defendant now under indictment for murder, of whom I have just spoken, when arraigned, demurred, and his counsel stated that even if he pleaded not guilty he would not be ready for trial before the May, and possibly, the November term, on account of absence of witnesses. The district attorney was in the same situation. All the witnesses reside at the westward and must be brought here at the expense of the Government, via San Francisco, unless the Government sees fit to furnish a vessel for the purpose. The mileage of the witnesses who testified before the grand jury has also to be paid by the Government. I have no doubt that the expenses in this one case will equal the expense of holding a term of court at Ounalaska; and by the holding of such a term in the spring at that place the necessity for bringing such witnesses here will be obviated.

Let me add here the suggestion that a like visitation by the governor, concurrent or otherwise, but perhaps better concurrent, is very desirable, as has been very plainly shown in the results of his frequent intercourse with the natives in the southeastern part of the Territory.

My suggestions are that the Government furnish at an early date a mail steamer for the conveyance of the governor and court officials from Sitka to Ounalaska, stopping at Unga and Kodiak, and giving postal facilities as well, or that it place at the disposal of the governor, marshal, or judge, for the same purpose, a revenue cutter or naval vessel for the period of two months between May 1 and October 1 next.

I wish, however, in this connection, to add certain suggestions, which I shall endeavor to make the subject of a separate letter to yourself and the Secretary of the Treasury by this mail.

Under your rulings contained in letter of May 29, 1890 (H. H. 7724-1889), my claim for the sum of \$55 for board and lodging while holding a term of court at Juneau in January, 1890, which I consider actual and necessary expense while traveling in the discharge of my duty, as provided in the organic act, were disallowed, although similar claims by the marshal and district attorney have been allowed and paid by the Treasury Department. It is fair to assume that a similar claim by me, if a term of court were held at Ounalaska, would also be disallowed, thereby forcing upon me an expenditure greatly beyond that incurred by remaining here and beyond that incurred by the marshal and district attorney.

The Treasury Department has disallowed the payment by the clerk,

under my order, out of the hire and forfeiture fund (the disbursement of which I and my predecessors have always claimed rested with the judge and not the Treasury Department) of the traveling expenses, as well as the board and lodging at Juneau at the same term of the clerk, deputy marshal, and interpreter.

The presence of these officers would be absolutely necessary at any term to be held at Ounalaska or elsewhere.

Whatever willingness I, myself, might have to pay my own expenses while holding such a term, I can not answer for a like disposition on the part of the officers named. Indeed, it would be safe to say that in view of the heavy disbursements they would be called upon to make they would not go there or elsewhere unless *all* their actual and necessary expenses were defrayed by the Government, and I certainly should not feel justified, even at the request of the Department, in ordering a term of court to be held away from the capital.

It follows, therefore, that unless these rulings are revised or other arrangements made at Washington, no term of court can be held in Alaska at any other place than Sitka.

I shall show this letter to Governor Knapp, who will doubtless communicate to you his views upon the subjects of your inquiry.

Respectfully,

JOHN S. BUGBEE,

United States District Judge, District of Alaska.

The ATTORNEY-GENERAL,

Washington, D. C.

I most heartily concur in the foregoing recommendation that a term of court be held at some place in western Alaska. Unless some measures are soon taken to facilitate the administration of the Government and enforce the laws, the lawlessness and crime already too common will be greatly increased. I believe the United States Government is under obligation, in justice to its people, to put western Alaska in close and constant relations with the local government it has established in the Territory. But the holding of a single term of court and an occasional visit by the executive in that section would be of incalculable benefit.

LYMAN E. KNAPP,

Governor of Alaska.

[Report No. 2192.]

IN THE SENATE OF THE UNITED STATES.

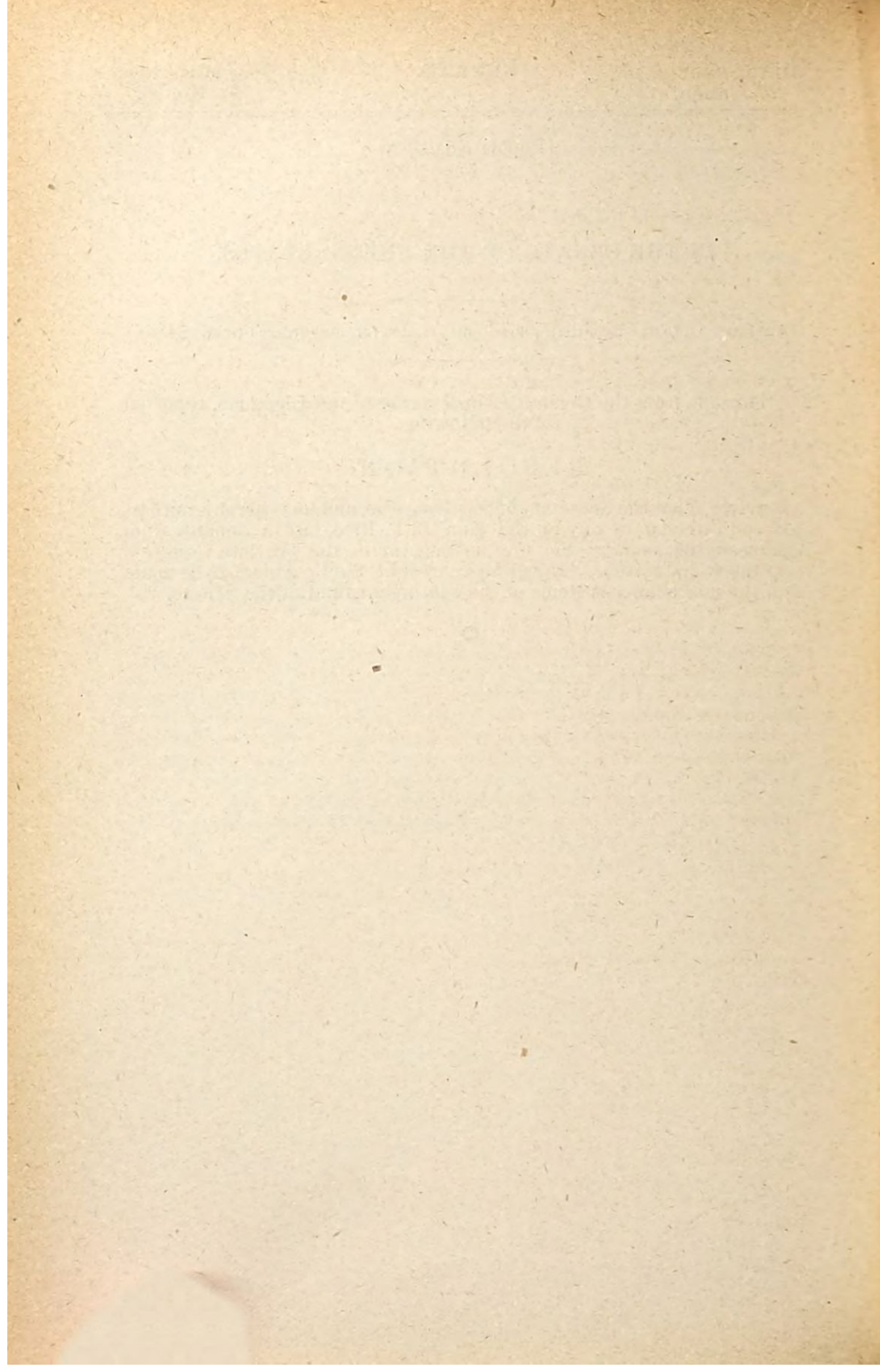
FEBRUARY 11, 1891.—Reported, placed on the Calendar, and ordered to be printed.

Mr. TELLER, from the Committee on Privileges and Elections, reported
the following

RESOLUTION:

Resolved, That the Secretary of the Senate be, and he is hereby, authorized and directed to pay to the Hon. B. F. Rice, late a Senator from Arkansas, the amount due him as Senator in the Fortieth Congress from the 4th of March, 1867, till he was paid. Said payment to be made from the miscellaneous items of the contingent fund of the Senate.

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IN THE SENATE OF THE UNITED STATES.

FEBRUARY 13, 1891.—Reported and ordered to be printed.

Mr. DAWES, from the Committee of Conference, submitted the following

CONFERENCE REPORT:

The committee of conference on the disagreeing votes of the two Houses on the amendments of the Senate to the bill (H. R. 12499) "making appropriations for fortifications and other works of defense, for the armament thereof, for the procurement of heavy ordnance for trial and service, and for other purposes," having met, after full and free conference have agreed to recommend, and do recommend, to their respective Houses as follows:

That the Senate recede from its amendments numbered 4, 7, and 8.

That the House recede from its disagreement to the amendments of the Senate numbered 2, 3, 5, 9, 12, and 13, and agree to the same.

Amendment numbered 1.

That the House recede from its disagreement to the amendment of the Senate numbered 1, and agree to the same with an amendment, as follows:

In lieu of the matter stricken out by said amendment insert the following:

ARTESIAN WELL AT FORT MONROE, VIRGINIA: *For obtaining water for the garrison, six thousand dollars,* and the Senate agree to the same.

Amendment numbered 6.

That the House recede from its disagreement to the amendment of the Senate numbered 6, and agree to the same with an amendment, as follows:

At the end of the amended paragraph insert the following:

Provided, That no contract for the expenditure of any portion of the money herein provided or that may be hereafter provided for the purchase of steel shall be made until the same shall have been submitted to public competition by the Department by advertisement, and the Senate agree to the same.

Amendment numbered 10.

That the House recede from its disagreement to the amendment of the Senate numbered 10, and agree to the same with an amendment as follows:

In lieu of the sum proposed insert *one hundred and fifty thousand dollars,* and the Senate agree to the same.

Amendment numbered 11.

That the House recede from its disagreement to the amendment of the Senate numbered 11, and agree to the same with an amendment as follows:

In lieu of the matter proposed to be inserted by said amendment, insert the following:

And one additional member shall be added to said Board of Ordnance and Fortifications who shall be a civilian and not an ex-officer of the regular Army or Navy, and he shall be nominated by the President, and by and with the advise and consent of the Senate appointed, and shall be paid a salary of five thousand dollars per annum and actual traveling expenses when traveling on duty: Provided, That the Board of Ordnance and Fortifications shall make an annual report to Congress, through the Secretary of War, on the first Monday in December in each year, showing the general operations of the Board and shall give a detailed statement of all contracts, allotments, and expenditures made by the Board; the first of these reports to cover these subject-matters from the beginning of the operations by the Board until the first report which they shall make, and the Senate agree to the same.

H. L. DAWES,

P. B. PLUMB,

A. P. GORMAN,

Managers on the part of the Senate.

M. S. BREWER,

BENJ. BUTTERWORTH,

Managers on the part of the House.

○

IN THE SENATE OF THE UNITED STATES.

FEBRUARY 13, 1891.—Reported and ordered to be printed.

Mr. DANIEL, from the Committee of Conference, submitted the following

CONFERENCE REPORT:

The committee of conference on the disagreeing votes of the two Houses on the amendment of the House of Representatives to the bill (3770) "to incorporate the Washington and Arlington Railway Company of the District of Columbia," having met, after full and free conference have agreed to recommend and do recommend to their respective Houses as follows:

That the Senate recede from its disagreement to the House of Representatives amendments numbered 1, 2, 3, 4, 5, and 7, and agree to the same.

That the Senate recede from its disagreement to House amendment numbered 6, and agree to the same, with an amendment as follows:

Provided, that the entire issue of stock and bonds shall not exceed the actual cost of constructing and equipping the road, including the bridge; and provided, also, that the total amount of bonds issued shall not exceed double the amount of the paid-up stock; and every certificate of stock issued shall show the amount paid on same.

That the Senate recede from its disagreement to the House amendment numbered 8, and agree to the same, with the following amendments:

If, in the course of the construction of said railway, or at any time thereafter, it shall be deemed by the Secretary of War necessary for the better protection of such water-pipes, fixtures, or apparatus, or for other water-pipes, fixtures, or apparatus that may be laid or applied, to raise or otherwise fix or adjust any avenue, street, road, alley, or public place containing or to contain such pipes, or to otherwise adjust the same so as to produce absolute security for all such pipes and apparatus existing or to be laid or arranged at any point or points on or contiguous to the line of said railway, such changes in grade and otherwise, or works, as shall be deemed necessary by the Secretary of War shall be made, done, and performed by and at the expense of said railway company and its successors and assigns, to the satisfaction of the Secretary of War; and the remainder of width of any avenue, street, alley, road, or other public place, at all such points or places, shall be raised, adjusted, repaved, and put in condition safe for all such pipes and apparatus and in a manner satisfactory to the Secretary of War and in conformity to any order of the Secretary of War in the matter, and at the expense of said company and its successors and assigns. Any structure work in, or change in the condition of, any such avenue, street, road,

alley or public place, not made in conformity with the provisions in this act contained, shall be unlawful.

JAMES McMILLAN,
JNO. W. DANIEL,
Managers on the part of the Senate.

WILLIAM W. GROUT,
P. S. POST,
JNO. T. HEARD,
Managers on the part of the House.

○

IN THE SENATE OF THE UNITED STATES.

FEBRUARY 11, 1891.—Reported, placed on the Calendar, and ordered to be printed.

Mr. RANSOM, from the Committee on Private Land Claims, reported
the following

RESOLUTION:

Resolved, That the Secretary of the Interior be, and he hereby is, requested to suspend all further action in respect of admitting land claims under the laws of the United States on the island of Anastasia, Florida, during the present session of Congress and until the expiration of the next session of Congress, unless Congressional action on the subject shall have been taken meantime.

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IN THE SENATE OF THE UNITED STATES.

FEBRUARY 14, 1891.—Ordered to lie on the table and be printed.

Mr. PADDOCK presented the following

**MEMORIAL OF THE WOMAN'S NATIONAL INDUSTRIAL LEAGUE
OF AMERICA, URGING LEGISLATION FOR THE PREVENTION OF
THE ADULTERATION OF DRUGS, MEDICINES, FOODS, ETC.**

We, the memorialists, present to the Senate of the United States this our memorial praying that your honorable body might favorably consider our petition and enact stringent laws which will in the future prevent the abuses herein enumerated.

The adulterations practiced differ in kind as well as in degree. One form of adulteration consists in the addition of substances usually of greatly inferior value, for the sake of bulk and weight, the choice being determined by the cheapness of the substitute.

Another form of adulteration consists in the addition of coloring matters of various kinds, with a view to heighten the color, and, as it is considered, to improve the appearance of the articles, as well as to conceal other forms of adulteration. This is a very prevalent adulteration, and is the most objectionable and reprehensible of all, because substances are frequently employed for the purpose of imparting color possessing highly deleterious and even in many cases poisonous properties, such as preparations of lead, copper, mercury, and even arsenic; the latter especially is found in candies dyed with red aniline colors.

A third description of adulteration consists in the admixture of substances for the purpose of imparting smell, flavor, pungency, and other properties.

The fourth is the deception practiced by the manufacturers and venders of the so-called patent medicines, of some cosmetics, and above all the vile compounds known as soothing sirups, bitters, and preparations for the stimulation of the growth of hair.

In the household, even the bread purchased contains alum, inferior and musty flour, and often mashed potatoes and white sand.

Butter contains oleomargarine, lard, annotto coloring, and sometimes even coarse beef and mutton fat.

Coffee: Several samples bought by the league in different parts of the city were sent to experts for analysis and roasted wheat, rye, corn, burnt beans; one sample contained roasted acorns and mud flavored with the essence of coffee.

Tea: Samples purchased contained mostly exhausted tea leaves, dried over again; some were adulterated with leaves of the horse-chestnut tree, leaves of the sycamore and plum tree.

The coloring of tea was composed of indigo, turmeric mixed with Prussian blue and black lead. Sugars and sirups contained glucose, burnt starch, and the powdered sugar flour and ground starch.

Lard extensively adulterated, the ingredients being water and flour, as well as potash, alum, carbonates of potash and soda, and caustic lime, these being intended either to cause the lard to hold water or to improve its consistence as well as color; the admixture of cotton-seed oil, and even fats from the entrails of animals.

Candies: Several samples were purchased and analyzed. Yellow candies were colored with lemon chrome and the pale variety with chromate of lead. Red candies contained aniline dyes, red lead, and even vermilion; brown candies, sienna earths; purple, an admixture of indigo, Prussian blue, and some red pigment; green candies, carbonate of copper, chromate of lead, and Prussian blue.

Extract of beef, especially in the liquid form, contains glue in solution.

Cider, with not a trace of the apple, consisted of vinegar, some alcohol, and molasses.

Honey in bottles admixed with glucose and pale sirup.

Mustard: Wheat flour colored with turmeric.

Marmalade made of the pulp of the apple or turnip, flavored with the rind of the orange or lemon.

Black pepper, mixed with wheat and corn flour, ground rice, ground mustard seeds, linseed meal, and coarse pepper dust.

Bitters, composed of the vilest stuff of raw whisky full of fusil oil, which in itself is a most poisonous ingredient.

Claret wine, made of decaying raisins, colored with logwood.

Brandy, with not a trace of the grape juice, but an admixture of whisky, alcohol, flavored with artificial oil of cognac—a very poisonous ingredient, imported mostly from Germany—colored with burnt sugar.

Patent medicines, composed of the violent narcotics, mercury, and adulterated drugs as well as chemicals, which for a moment numb the pain but do not reach the cause of the disorder. Ingredients which no regular practicing physician would dare to prescribe form the basis of these secret remedies, and they are sold under fictitious names. Antipyrene is used in patent medicines for the relief of headache, but the frequent use of the same has only too often resulted in partial paralysis of the brain. Bromide of potash forms the basis of most of the advertised remedies to cure epileptic fits. Momentary relief is often obtained from the use of that chemical, but the repeated administration of patent medicines containing bromide produce paralysis of the spine.

Patent medicines advertised ostensibly for the cure of opium habits contain morphine in solution, and the cravings for these deceptive liquids by the unfortunate are often beyond power of resistance. Elixirs of opium advertised under fictitious names are sold all over this country, and are to be found in every drug store.

But the vilest of all compounds which contain morphine in solution is known as "Mrs. Winslow's Soothing Sirup." This soothing sirup is fraudulently advertised as a harmless medicine; it quiets the children and produces a sound but most unhealthy sleep. This "soothing sirup" has killed thousands of children, as well as hundreds of other quack medicines, and those who have survived have only too often become idiots and thousands of them are now in lunatic asylums. The consequence is, insanity is alarmingly on the increase in this country at the expense of the States and Territories; in some States as high as 40 per cent. within the past decade. The Governments of France, Russia, and Germany have prohibited the importation of "Mrs. Winslow's Soothing Sirup." Mothers, in their innocence, administer this subtle poison hourly to their children.

When in October of last year the Druggists' Association, representing millions of capital of the leading patent-medicine manufacturers in this country, held its meeting at the Arlington Hotel in this city, the president of the Woman's National Industrial League presented a memorial. In the same mention was made and protest entered against that vile and poisonous stuff "Mrs. Winslow's Soothing Sirup." The Druggists' Association took exception to this, and unless the sentence condemning this vile and poisonous sirup was stricken out they declined to entertain that memorial.

We refused to strike out the objectionable soothing sirup paragraph and our memorial was not presented to the convention. Upon further discussion with the members of that association, assertion was made that if a clause be presented to the Senate for the prohibition of this soother and similar compounds, they would spend half a million dollars to defeat the bill.

The industrial classes, of both sexes, being not always able to procure medical assistance, are forced to resort to the patent medicines. So they are the largest consumers; it is therefore of vital importance and imperatively necessary for the protection of the industrial classes that a stringent law be enacted and that the ingredients which form these medicines be printed upon each label and the omission of the same as well as the misrepresentation being not only punishable by a fine, but always with imprisonment and confiscation of these deceptive nostrums.

As to the adulteration of articles of food the industrial women which your memorialists represent are by far the greatest sufferers. Not only are they swindled out of their meager earnings, but their health is jeopardized as well by consuming vile and adulterated compounds. Therefore we pray for strict legislation on this subject.

CHARLOTTE SMITH,

President Woman's National Industrial League of America.

CATHERINE BERGEN,

Secretary.

WASHINGTON, D. C., *February 4, 1891.*



IN THE SENATE OF THE UNITED STATES.

FEBRUARY 16, 1891.—Presented; referred to the Committee on Foreign Relations and ordered to be printed.

Mr. PLUMB presented the following

MEMORIAL OF THE UNIVERSAL PEACE UNION, UNITED STATES
OF AMERICA, FOR THE APPOINTMENT OF A COMMISSION TO
SECURE AN INTERNATIONAL COURT OF ARBITRATION.

*Memorial to the Senate and House of Representatives of the United States
of America in Congress assembled.*

Whereas your memorialists are convinced that the military system could not be introduced among civilized nations in this age were it not already fastened upon us, being fostered by long standing, nurtured by selfishness, and protected by prejudice against the dictates of reason and justice; and

Whereas we are convinced that military rules and practices are antagonistic to right, truth, and liberty, and we believe the present age is fully ripe for the creation and maintenance of an international tribunal of arbitration, giving each nation equal representation, the efficiency of which will make it successful in the adjustment of all national and international disputes when nations by negotiation have failed to agree:

Therefore we earnestly petition your honorable body to create a commission to visit other civilized governments to induce them to unite in the organization of an international tribunal of arbitration, with the sole and only object to hear and determine such vexed questions as nations have failed to determine among themselves and which would otherwise result in a declaration of war.

Equal safety for the weaker nations with the stronger should be provided for.

No form of government or phase of religion should have preference in this tribunal, or any special language except such as may be determined by mutual agreement for the use of the tribunal.

Since such a tribunal will be the greatest safeguard for life, liberty,

peace, and prosperity of all people and the means to preserve the nations' highest honor and dignity; and since, without such a tribunal there is danger that devastating and cruel wars may occur, we feel an emergency exists for prompt and immediate action.

Committee:

England, Victor B. Hall, 1121 Arch street, Philadelphia, Pa.;
 Armenia, John Ozanian, 610 Wood street, Philadelphia,
 Pa.; Germany, Francis Fox, 1609 North Fourth street, Phil-
 adelphia, Pa.; German-American, Alphonse Fox, 1609 North
 Fourth street, Philadelphia, Pa.; Spain, Benjamin C. White,
 630 Race street; France, D. Patin, 113 South Thirteenth
 street; Sweden, John M. Wennerhohn, 1203 Melon street;
 Bulgaria, W. Grablachopp, 249 North Eleventh street, Phila-
 delphia, Pa.; East India, P. J. Lackersteen, 828 Walnut
 street.

THE UNITED NATIONALITIES,
 DEPARTMENT OF THE SCHOOL OF VITAL SCIENCE,
Philadelphia, Pa.

*Memorial to the Senate and House of Representatives of the United States
 of America in Congress assembled.*

Whereas your memorialists are convinced that the military system could not be introduced among civilized nations in this age were it not already fastened upon us, being fostered by long standing, nurtured by selfishness, and protected by prejudice against the dictates of reason and justice; and

Whereas we are convinced that military rules and practices are antagonistic to right, truth, and liberty, and we believe the present age is fully ripe for the creation and maintenance of an international tribunal of arbitration, giving each nation equal rights and equal representation, the efficiency of which will make it successful in the adjustment of all national and international disputes when nations by negotiation have failed to agree:

Therefore we earnestly petition your honorable body to create a commission to visit other civilized governments to induce them to unite in the organization of an international tribunal of arbitration, with the sole and only object to hear and determine such vexed questions as nations have failed to determine among themselves and which would otherwise result in a declaration of war.

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danger that devastating and cruel wars may occur, we feel an emergency exists for prompt and immediate action.

Jacob J. M. Miller, Albert H. Love, Philadelphia; Thos. I. Whitney, 60 North Fourth street, Philadelphia, Pa.; Sarah T. Rogers Eavenson, M. D., 1015 Vine street, Philadelphia, Pa.; A. T. Eavenson, 2013 Vine street, Philadelphia, Pa.; M. M. Eavenson, 2015 Vine street, Philadelphia, Pa.; Wm. J. Eavenson, 1231 Parrish street, Philadelphia, Pa.; John J. Lytle, 537 North Twentieth street, Philadelphia, Pa., secretary of the Universal Peace Union; Henry S. Clubb, 310 Chestnut street, Philadelphia, Pa., vice-president U. P. U.; Victor B. Hall, 1121 Arch street, Philadelphia, Pa.; Phœbe A. Leeds, 1418 Bowbeer street, Philadelphia, Pa.; Jennie Heppenstall, 715 North Tenth street, Philadelphia, Pa.; Belva A. Lockwood, District of Columbia, vice-president.

VERA CRUZ, IND., *February 4, 1891.*



IN THE SENATE OF THE UNITED STATES.

FEBRUARY 18, 1891.—Presented; ordered to lie on the table and be printed.

The VICE-PRESIDENT presented the following

ADDRESS AND RESOLUTIONS OF THE NATIONAL ASSOCIATION
OF BUILDERS, FORMULATED AND PASSED AT THE FIFTH AN-
NUAL MEETING, AT NEW YORK, FEBRUARY 12, 1891, PRAYING
THE IMMEDIATE PASSAGE OF THE TORREY BANKRUPT BILL.

NEW YORK, *February 12, 1891.*

The honorable the Senate and House of Representatives
in Congress assembled:

The National Association of Builders, composed of citizens of the
several States of the Union, respectfully submits for your consideration
an address and resolutions as follows:

THE ADDRESS.

The builders of the country pursue a calling founded upon mathe-
matical calculations, the strength of materials used, and the laws of
nature. They are willing, therefore, to conduct the business of their
calling upon the basis of the integrity of commercial transactions, ac-
cording to the rules of equity, and with due regard to the rights of
their competitors in business and the men with whom they deal both
as debtors and creditors.

The size, style, or expense of buildings is not varied in the several
States because of the difference in their general laws, but the builders
often find to their detriment that their rights are modified and their
responsibilities changed by such laws as they go from State to State
in the pursuit of their calling, and that there is thereby levied upon
them useless expense which otherwise would be saved to them and their
patrons. They, therefore, are interested in the enactment of a uniform,
equitable, national law, under which their rights shall at all times and
in all places be easily understood and readily enforced.

"To give and take by the same rule" has always been their practice,
and they are therefore interested in an absolute equality between the
volunteer parties to transactions on credit, and, for themselves and on
behalf of those with whom they deal, announce the necessity for a com-
prehensive law, embodying provisions for both voluntary and involun-
tary bankruptcy.

Attention is hereby called to the universal laws for the administra-
tion of the estates of deceased persons and the determination of the
rights of creditors as between themselves and against such estates, and
the necessity urged for a national law to govern the relationship and

determine the rights of the creditors and the bankrupt in the event of commercial death.

The United States is the only Nation of the first class upon the earth which has not in force a bankrupt law for the determination of the property rights of creditors, the prevention of bankruptcies, and the discharge of honest but unfortunate debtors, although the founders of Government foresaw the necessity for such a law and made ample provisions therefor in the Constitution.

THE RESOLUTIONS.

Resolved, That the integrity of commercial transactions must be maintained according to the rules of equity for the maintenance and the perpetuation of the commerce of the world.

Resolved further, That the variance of the State laws relating to insolvency is such as to discourage the extension of business transactions, create distrust between men in different parts of the country, and increase the cost of buildings.

Resolved further, That legislation which deals with the rights incident to voluntary transactions on credit should not favor either party thereto at the expense of the other, and that a law embodying provisions for voluntary to the exclusion of involuntary bankruptcy, or the the reverse, would be hurtful to the best business interests of the country, and should therefore not be countenanced in any form or for any purpose by our national legislators.

Resolved further, That since the Constitution of the United States reserves to Congress the sole power to enact a uniform law upon the subject of bankruptcies, and forbids the impairing of the obligation of contracts by the States, it is the duty of Congress to provide a national law pursuant to which the rights and responsibilities of bankrupts and their creditors will be as readily understood and as easily enforced as the probate laws of the various States.

Resolved further, That the United States should have as a part of its permanent laws a bankruptcy code, to the end that it may be abreast of the times and in accord with the position of the other first-class nations of the earth upon that subject.

Resolved further, That the ends recited above will be attained by the immediate passage of the Torrey bankrupt bill, now upon the calendar of the Senate awaiting consideration.

Resolved further, That a copy hereof be authenticated by our officers and forwarded to the Vice-President of the United States for presentation to the Senate, and to the Speaker for presentation to the House of Representatives.

The foregoing address and resolutions were, on the day indicated, submitted, considered, and unanimously adopted for the purpose therein expressed.

JOHN J. TUCKER,
President.

Attest:

WM. H. SAYWARD,
Secretary.

IN THE SENATE OF THE UNITED STATES.

FEBRUARY 18, 1891.—Presented, referred to the Committee on Indian Affairs, to accompany an amendment intended to be proposed to the Indian appropriation bill, and ordered to be printed.

Mr. STEWART presented the following

LETTER FROM THE COMMISSIONER OF INDIAN AFFAIRS, RECOMMENDING AN APPROPRIATION FOR THE MAINTENANCE OF THE INDIAN SCHOOLS AT CARSON CITY, NEV.

DEPARTMENT OF THE INTERIOR,
OFFICE OF INDIAN AFFAIRS,
Washington, February 18, 1891.

SIR: Replying to your telephonic inquiry regarding the amount of money needed to carry on the school at Carson City, Nev., allow me to say that the school is now in very successful operation with, at last accounts, 105 pupils in attendance. These pupils were gathered very quickly and apparently without difficulty, soon after school opened. From the information which I have I am led to believe that it is entirely possible to maintain at that place a school of 200 at least. As you are well aware there are large numbers of Indians in that section of the country who have very poor or no school accommodations, and they seem eager to avail themselves of the opportunity offered at Carson of securing for their children an English and industrial training.

There is at present, as you know, but one building, which is used for all purposes—dormitory for boys and also for girls, school rooms, dining room, hospital, etc.

It would be very much better every way, especially if the school is to be increased in size, that there should be erected first a dormitory for boys to accommodate, say, 125. This would leave the present building for the exclusive use of the girls, not only increasing the capacity of the school, but rendering discipline much easier. This building could be erected by Mr. Gibson for probably \$20,000.

There should also be a hospital, which would cost probably \$3,000 more. It would be very greatly to the advantage of the school if there should be erected a separate school building.

I think, however, that it would be well to postpone that for another year, until it has been demonstrated that the number of pupils that can be secured for the school will render such a building absolutely necessary.

Mr. Gibson said to me on my visit to the school that there is a small piece of land lying near the present school premises, not particularly valuable in itself and worth but little for agricultural purposes, but which could be utilized, if I remember rightly, as a reservoir and be

made very valuable to the school. This land, he told me, could be purchased for \$300.

The cost of maintenance of pupils at that school is fixed at \$175 per capita per annum. If we care for 150 next year this will require an expenditure for support of \$25,250. If the attendance should reach 200, the cost of support would be \$35,000. It is possible to run the school in a very creditable way and take care of about 150 pupils by overcrowding and inconvenience for the sum of \$25,000.

My own judgment is that it is wise economy to enlarge the school so that it can care for 200. If you concur in this from your knowledge of the situation, I shall be very glad if you would ask the committee to change the appropriation so that it will stand:

For the support and education of Indian pupils at the Indian school at Carson City, Nev., at \$175 per annum each, and for the necessary buildings, repairs, and purchase of additional ground, and for the pay of superintendent of said school, at \$1,800 per annum, \$60,000.

Very respectfully,

T. J. MORGAN,
Commissioner.

Hon. W. M. STEWART,
United States Senate.

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IN THE SENATE OF THE UNITED STATES.

FEBRUARY 19, 1891.—Presented, referred to the Committee on Commerce, and ordered to be printed.

Mr. DOLPH presented the following

MEMORIAL OF THE COLUMBIA AND SNAKE RIVERS AUXILIARY
WATERWAY ASSOCIATION, PRAYING AN APPROPRIATION BY
CONGRESS FOR THE IMPROVEMENT OF SAID RIVERS.

WALLA WALLA, WASH.,
February 5-6, 1891.

*To the honorable the Senate and House of Representatives
of the United States :*

We, your memorialists, the representatives of the various boards of trades, chambers of commerce, farmers' alliances, and other organizations throughout the vast territory bordering upon and drained by the Columbia and Snake Rivers and their tributaries, in convention assembled at Walla Walla, Wash., respectfully represent and pray :

1. We have been drawn together by the long continued and burdensome exactions of the railway transportation companies and the present great distress of producers resulting from the total incapacity of these transportation companies to move to market the products of the territory we represent. We have suffered and are now suffering untold distress and embarrassment by reason of the present great grain blockade, resulting from the incapacity of these transportation companies, and we foresee only increased financial embarrassment and greater distress, which will inevitably follow the increased acreage of the next year throughout this great grain-producing territory.

2. We represent that, although the absence of proper transportation facilities has deterred our farmers from reducing to cultivation more than a fourth part of our fruitful soil, nevertheless the crop of grain harvested in the year 1890 so far exceeded the facilities of existing railroads to carry it to market, that much of it must inevitably remain unmarketed even after the next crop is harvested, and, as a natural consequence, in some remote districts can not be sold at any price; that there is no promise whatever of any relief from additional railroads; and that the natural outlet for the products of all this territory is by way of the Columbia and Snake Rivers.

3. We further represent that the most economical means for moving these products is by river transportation, and that the location of these two great rivers and their tributaries make them easily accessible to all of this immense inland empire.

4. We deplore the fact that these great navigable rivers, the natural arteries of commerce, in their present condition, are practically useless and wholly unused by the people of this inland empire, by reason of the obstructions now existing in them; we believe that all of these

obstructions can be and should be removed, and in view of the long delays in prosecuting the work of overcoming these obstructions, the time has come for us the more urgently to beseech Congress for immediate and permanent relief from the embarrassments and unreasonable freight rates under which we now labor.

5. We desire hereby to express our appreciation and gratitude to the Senators and Representatives from Oregon, Washington, and Idaho, and other friends in Congress, for the able manner in which they have heretofore advocated our cause in the securing of former appropriations, and especially to Senators Mitchell and Dolph and Representative Herman of Oregon for the long, continued, and urgent manner in which they have labored for this long needed improvement of these rivers.

6. We urgently pray that the Senate bill introduced by Senator Dolph, of Oregon, providing for a special appropriation of the estimated cost of completing the canal and locks at the Cascades of the Columbia be passed and made a law

7. We deplore the slowness and dilatory manner in which the work on the canal and locks at the Cascades has been conducted, and we believe that much valuable time and much money have been and are being wasted on this improvement by reason of the uncertainty and inadequacy of the appropriations.

8. We believe that the work upon these various improvements could be more economically and rapidly advanced if done by contract; and we recommend that hereafter all appropriations made for the improvements at the Cascades and The Dalles be conditioned upon the work provided for being let to the lowest responsible bidder, such contractor to work under the supervision of the Secretary of War, and to have the privilege of using the Government plant or outfit owned by the Government then upon the ground where the work is to be done; provided that in all cases when, after proper advertisement, no bids are received, the work be done in the usual way by the War Department.

9. We urgently ask that the bill introduced by Senator McConnell, of Idaho, appropriating \$100,000 for clearing obstructions from Snake River, be passed and made a law; and that the work already begun, of removing obstructions from the Columbia above the mouth of Snake River, be continued upon a liberal scale.

10. We believe that a ship railway, as recommended by the Oregon delegation in Congress, is the most economical, satisfactory, and expeditious plan for the permanent improvement at The Dalles of the Columbia; and we ask that the estimated cost of such improvement be so appropriated as that that work may be immediately begun and carried to completion without interruption or delay. And your memorialists will ever pray.

W. P. GRAY,
President.

C. J. TRENCHARD,
Secretary.

IN THE SENATE OF THE UNITED STATES.

FEBRUARY 19, 1891.—Presented; referred to the Committee on Railroads and ordered to be printed.

The PRESIDENT PRO TEMPORE presented the following

**MEMORIAL OF THE LEGISLATIVE ASSEMBLY OF MONTANA PRAY-
ING FOR THE PASSAGE OF A BILL PROMOTING THE CONSTRUC-
TION OF A RAILROAD BY THE MONTANA MINERAL RAILWAY
COMPANY.**

[House joint memorial No. 1.]

HOUSE JOINT MEMORIAL TO CONGRESS PRAYING FOR THE PASSAGE
OF A BILL PERMITTING THE CONSTRUCTION OF A RAILROAD BY THE
MONTANA MINERAL RAILWAY COMPANY.

*To the honorable the Senate and House of Representatives
of the United States in Congress assembled :*

Your memorialists, the second legislative assembly of the State of Montana, would most respectfully state the following facts :

First. One of the largest and most promising mining districts in the State of Montana lies very near to the northeastern boundary of the Yellowstone National Park (but without the limits of the same). This district is rich in silver, lead, and gold, and is known as the "New World mining district," and the town which has sprung up at that point is called "Cooke" or "Cooke City."

Second. Because of the large amount of lead in this district railroad transportation is a vital necessity to its practical development, and must be had before the large number of property owners of the section can realize on their holdings, or its wealth be added to that of Montana and the world. More than nine hundred bona-fide mining claims are opened in this district, and some of them have had many thousands of dollars expended on their development, with the most gratifying results, in so far as the amount of ore thereby exposed is concerned.

Third. In a mountainous country, such as that under consideration, it is obvious that, when possible, a railroad should follow the depressions of the country made by the water drainage, and that any other location of a railroad will, in comparison, be extremely costly and difficult to construct.

Fourth. Cooke City is drained by Soda Butte Creek, which empties into the east fork of the Yellowstone River, and which in turn empties into the Yellowstone River itself, and the only practicable route for a railroad (without the expenditure of enormous amounts of money in its construction) is from Cooke down along the streams mentioned to connect with the National Park Branch Railroad at Cinnabar, on the Yellowstone River, a distance from Cooke to Cinnabar along the route mentioned of about 62 miles.

Fifth. Almost the entire length of the proposed railroad route (which is also the route of the present wagon road) outlined above lies within the geographical limits of the Yellowstone National Park, but it is very near the northern boundary thereof, and is far removed from any object of interest to tourists, and consequently never visited by them.

Sixth. There is now pending in the House of Representatives Senate bill 491, which bill has been favorably reported by the House Committee on Public Lands, together with an amendment granting a right of way to the Montana Mineral Railway Company, which right of way is along the route herein specified, viz, from Cinnabar up either bank of the Yellowstone River and its tributaries directly to the New World (sometimes called Clark's Fork) mining district.

Therefore your memorialists pray that your honorable bodies will speedily cause the above referred to amendment to Senate bill 491, as reported by the House Committee on Public Lands, to be speedily enacted into a law and thereby remove an obstacle which prevents the advancement of an important section of our State.

And your memorialists will as in duty bound ever pray.

R. G. HUMBER,

Speaker pro tem., House of Representatives.

J. C. RICKARDS,

President of the Senate.



IN THE SENATE OF THE UNITED STATES.

FEBRUARY 21, 1891.—Submitted and ordered to be printed.

RESOLUTION

Intended to be offered by Mr. MCPHERSON.

Resolved, That in the judgment of the Senate it would be an act of wisdom and prudence on the part of the United States to engage in the work of constructing a canal across the isthmus at Nicaragua and Costa Rica, provided it may be done under the terms of a treaty to be negotiated between the Government of the United States and the Government of Nicaragua and acceptable to both Governments. Therefore, to accomplish this purpose, and to secure a water route between the two oceans, the President of the United States is hereby requested to open negotiations with the Government of Nicaragua with the object of securing from said Government a treaty containing stipulations under which the United States would be justified in undertaking this work; it being expressly understood that the Maritime Canal Company shall be entitled to such compensation, not exceeding seven millions of dollars, for work already done, as shall be determined by the President of the United States and the Republics of Nicaragua and Costa Rica, as justly due to it.



INVESTIGATION OF THE FISH COMMISSION.

TESTIMONY

TAKEN BY A

SUBCOMMITTEE OF THE COMMITTEE ON FISHERIES,

UNITED STATES SENATE

IN THE MATTER OF

THE INVESTIGATION OF THE UNITED STATES
FISH COMMISSION.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1891.

THE UNITED STATES OF AMERICA

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

WASHINGTON

REPORT OF THE GEOLOGICAL SURVEY

OF THE UNITED STATES

OF THE INTERIOR

AND OF THE GEOLOGICAL SURVEY

OF THE UNITED STATES

OF THE INTERIOR

WASHINGTON

IN THE SENATE OF THE UNITED STATES.

FEBRUARY 21, 1891.—Submitted and ordered to be printed.

MR. STOCKBRIDGE SUBMITTED THE FOLLOWING

TESTIMONY

TAKEN BEFORE THE

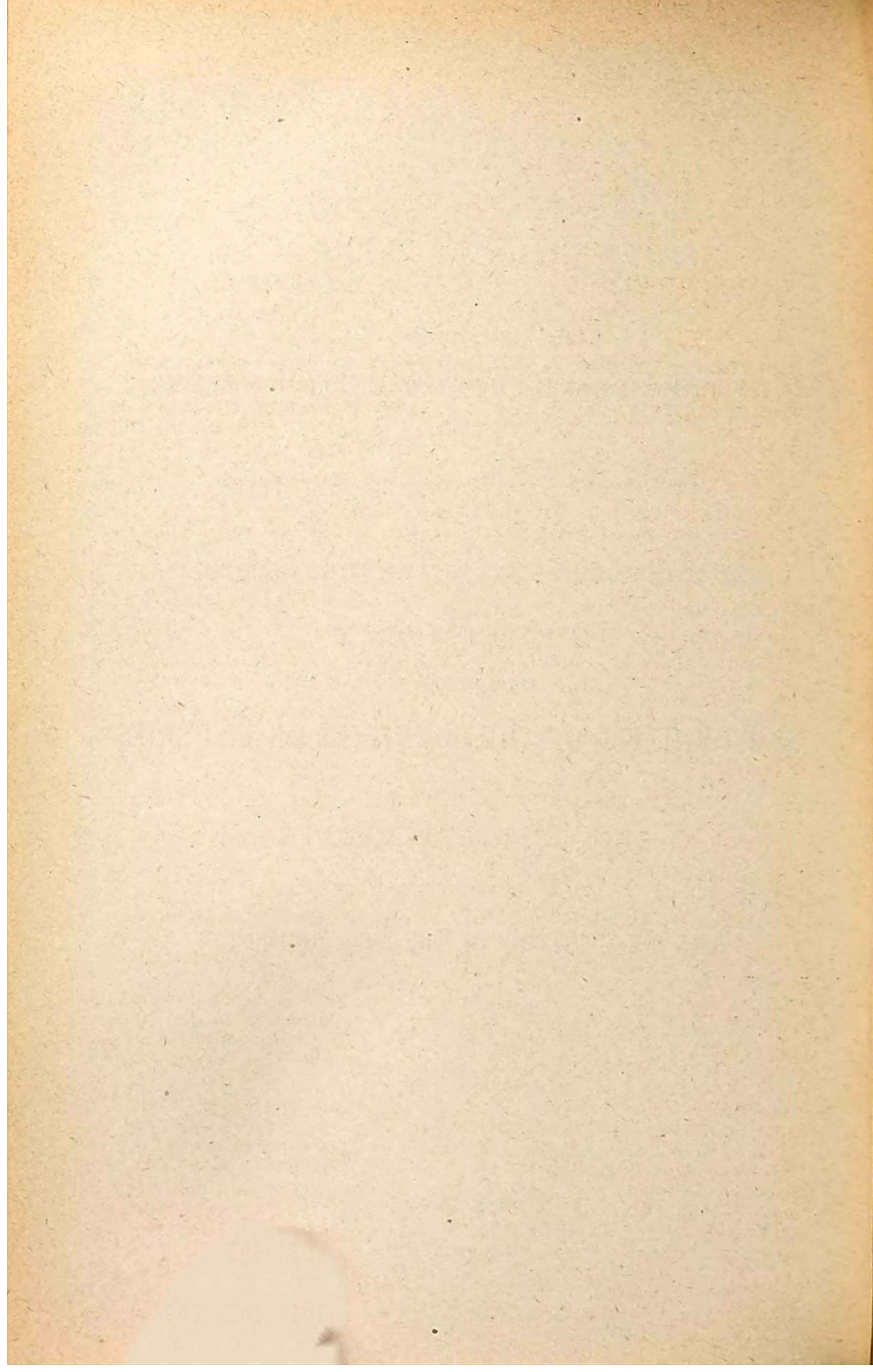
SUBCOMMITTEE OF THE COMMITTEE ON FISHERIES

OF THE

UNITED STATES SENATE

IN RELATION TO

THE INVESTIGATION OF THE FISH COMMISSION.



INVESTIGATION OF THE FISH COMMISSION.

TESTIMONY TAKEN BY A SUBCOMMITTEE OF THE COMMITTEE ON FISHERIES, UNITED STATES SENATE, IN THE MATTER OF THE INVESTIGATION OF THE U. S. FISH COMMISSION.

WASHINGTON, D. C., *June 13, 1890.*

The committee met at 10 o'clock a. m.

Present: Senators STOCKBRIDGE (chairman), SQUIRE, and BLODGETT.

The CHAIRMAN. I will read the resolutions under which the committee is authorized to conduct the inquiry we are about to inaugurate:

Resolved, That the Committee on Fisheries be, and it is hereby, instructed to make early inquiry into the administration of the affairs of the United States Fish Commissioner's office, and especially in respect of the changes in the force, compensation paid to employés, and any alleged favoritism or other undue administration, and report to the Senate thereon.

Resolved, That the said committee have power to send for persons and papers.

That is the authority of the committee for proceeding.

TESTIMONY OF LOUIS J. LANG.

LOUIS J. LANG, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What is your full name?—A. Louis J. Lang.

Q. Where is your residence?—A. Brooklyn, N. Y.; that is my place of residence.

Q. You are temporarily here as the representative of the New York Press?—A. Yes, sir, of the New York Press.

Q. Mr. Lang, allow me to call your attention to an article published in the Sunday Press of New York, May 25. You may take the article [handing article to witness.] It is cut from the paper. Just glance your eye over it and tell us whether you have seen it before.—A. I believe I have seen it before.

Q. Did you as correspondent of the paper forward this article to your paper or furnish it to your paper?—A. That was furnished to the Press. I must decline to answer whether it was furnished by me or not.

Q. There are subsequent articles. There is the article of the 26th, headed "McDonald must go—The Press exposé causes a little sensation. Washington, May 25." Will you just glance at that and see if you know anything about its being furnished to the Press?—A. I suppose it must have been furnished to the Press.

Q. Will you state whether you forwarded it?—A. I must decline to answer that question also. The Press published the story.

Q. Here is another Press of June 2, and also various issues of the Press. I suppose your answer will be the same in regard to all of them?—A. Yes, sir. The Press has published the matter and is responsible for the article. The Press has published the different dispatches regarding Mr. McDonald and is responsible for them.

Q. Are you the Washington correspondent of the Press?—A. Yes, I am.

Q. Can you tell the committee who furnished this material for the Press?—A. Well, I should have to violate a confidence if I should tell you that; I do not mean any disrespect to the committee at all, but I should regard it as highly unprofessional to betray my news sources, and I think the Press would regard it so also. But the articles are there, the Press published them, and is responsible for them, I suppose.

Q. Have you any knowledge of these subjects? You have heard the resolution read. The committee is charged to investigate generally the administration of affairs of the Fish Commission. Now, have you any knowledge of your own touching that subject?—A. Only the statements of responsible men which have been made to me.

Q. To you?—A. Yes, sir.

Q. You yourself have no knowledge of it; you have made no investigation personally?—A. It depends upon what you mean by personal investigation.

Q. I understood you to say that you know what you have been told by various parties in whom you have confidence.—A. Certainly.

Q. You have not been to the office of the Fish Commission to investigate yourself?—A. I have not been to the office of the Commission, and whatever I know of the Commission has been gained through statements of men in whom I have every confidence, and whom I regard as responsible for what they said—men who have occupied responsible positions under the Government for years, and whose veracity, so far as I know, has never been called into question.

Q. Do you mean in the Commission, so that they would have a knowledge of the working of the Commission?—A. In the Commission, and in other Departments of the Government dealing with the Commission.

Q. Mr. Lang, we want information upon this subject, and can you give us, without saying who the parties were, or from who you received the information, the names of any parties from whom we could get light upon this subject?—A. I furnished a list of about sixty witnesses to Mr. Olds to be subpoenaed the other day, and I think perhaps they can furnish the testimony you wish.

Q. Would you state if any of your informants are now in the employ of the Fish Commission?—A. Well, now, I am under oath and I could not swear to that statement as to whether they are or not.

By Senator BLODGETT:

Q. You do not know?—A. I do not know positively, so that I would not like to make the statement.

Q. You have given the names of all persons who you believe know anything about this matter?—A. No, I have an additional list.

The CHAIRMAN. Please give the additional list to the clerk.

The WITNESS. I will do so.

(The witness furnished to the clerk of the committee an additional list of names.)

By the CHAIRMAN:

Q. Are the witnesses named in this list people who are in Washington?—A. I think so.

The CHAIRMAN. From whom we may hope to gather information?

The WITNESS. I hope you will, as the Press desires the fullest kind of an investigation in this whole thing.

The CHAIRMAN. I do not know of anything further, but if there is anything in a general way you desire to speak of we will be glad to have you do so.

The WITNESS. I will say in a general way, that these articles speak for themselves, and that I do not know that anything can be added except by the testimony of witnesses.

The CHAIRMAN. We propose to call them.

The WITNESS. The Press is responsible for what it has printed; the articles are there and I can only refer you to them.

By Senator BLODGETT:

Q. Is there any other correspondent of the Press in Washington besides yourself?—A. No, sir.

TESTIMONY OF CHARLES W. SMILEY.

CHARLES W. SMILEY, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What is your full name?—A. Charles W. Smiley.

Q. Where is your residence?—I am a Government employé. My voting residence is Massachusetts, and my residence in Washington is 943 Massachusetts avenue.

Q. Mr. Smiley, I would simply say that this investigation was asked for by the Commissioner in consequence of a series of articles published in the New York Press, making various charges against the Commissioner and his management of the Commission. This committee is inquiring generally into that subject, and perhaps the better way would be to ask you in your own way to give us any information you have touching this subject. I take it, Mr. Smiley, you have read the various articles, or some of them, which have appeared in the New York Press?—A. I have read one article only in the New York Press, a dispatch from Washington which contained some allegations. That is all that I have seen.

Question. Is that the one of May 25?—Answer. I do not remember the date, but if you can show me the paper I can identify it very quickly.

Q. [Handing the witness the paper.] Maybe that is it?—A. That is the article I saw, the article of May 25.

Q. You can look it over and refresh your memory, and the committee will be glad to have you state whatever knowledge you have of the charges which are therein preferred against the Commission and the Commissioner.—A. Well, sir, it struck me when I read this article that this was more an attack upon the Commissioner than it was upon the general operations of the Commission.

The CHAIRMAN. It is an attack upon his administration of the Commission.

The WITNESS. I have known very little of the Fish Commission since last September, when I left the Commission after a service of eight

years. I left the Commission to assist Mr. Porter in the Census Office. During this time I have found enough to occupy myself there, so that I did not have much opportunity of knowing what was going on in the Fish Commission.

By Senator SQUIRE:

Q. When did you finish your practical knowledge of the business of the Fish Commission?—A. I think my appointment took effect the first day of September.

Q. Last September?—A. Yes, sir.

Q. You were about eight years in the Commission?—A. Yes, sir, about eight years.

By the CHAIRMAN.

Q. What position did you occupy in connection with the Commission?—A. When I went to the Commission in 1881 or 1882—1882, I think—Professor Baird appointed me chief of the Division of Records, and placed in my hands all correspondence, all letters received, and all documents of the Commission. I was the keeper of the archives. Shortly afterwards—a few months—he made me editor of the Fish Commission publications, and placed in my hands the matter of the distribution of publications, and in due time I came in charge of the purchasing and distributing of stationery and such other duties as practically correspond to a chief clerkship. It was never known by that name. It came after a time to be known as the Division of Records and Publications. I remained in that position during all of Professor Baird's administration. During McDonald's administration I was relieved of one responsibility after another, so that at the time I left the Commission to go to the Census Office I was simply librarian and in charge of the stationery. My duties at that time were about one-fourth or one-fifth the responsibility that they had been previously, but Mr. McDonald was kind enough to continue me at the same salary all this time, although relieving me of the larger part of my responsibilities.

By Senator SQUIRE:

Q. What time did the administration of Mr. McDonald commence?—A. I think the date, possibly, of his taking the oath of office was the 18th of February, 1888. Professor Baird died about the 24th of August, 1887.

Q. Who administered it from the time Professor Baird ceased to administer it up to the time the McDonald administration commenced?—A. During the few weeks' interregnum the assistant commissioner was Acting Commissioner, Major Ferguson. President Cleveland appointed G. Brown Goode, Director of the National Museum, to be also Commissioner of Fish and Fisheries. Mr. Goode retained that office down to the time Colonel McDonald was appointed, barring the fact that he took leave of absence for a part of the time, and allowed Dr. J. H. Kidder to be Acting Commissioner in his absence.

Q. When did he commence his active operation which has been continuous up to the present time?—A. He went upon duty immediately, upon the 18th of February, if that was the date.

Q. But he was absent some time?—A. Oh, no; it was Mr. Goode who was absent. He was absent some during that intervening period between the death of Professor Baird—about the 24th of August, 1887—and Mr. McDonald coming into control—the eighteenth of February, 1888. Since that McDonald has been Commissioner continuously.

By the CHAIRMAN:

Q. Will you please tell us if Mr. Commissioner McDonald was in the service of the Commission before his appointment by President Cleveland as the head of the Commission?—A. Oh, yes; Mr. McDonald was an employé in position with myself, being chief of the Division of Distribution of Fishes.

By Senator SQUIRE:

Q. How long did he occupy that position?—A. He was appointed chief of the Division of Distribution of Fishes in 1882, about the same time that I was placed in charge of the Record and Publication Division. We had both been in the census of 1880; McDonald and myself had both served a period in the census of 1880, and as that work closed out Professor Baird selected us to go into the Fish Commission.

Q. Your service was about contemporaneous, then?—A. Yes, sir; very nearly so; so that I have been well acquainted with him, and for some time very intimately acquainted with McDonald during this whole period, and also during the time we were in the census together, ten years ago. I first made his acquaintance just about ten years ago, at the time of the opening of the census of 1880.

Q. Were you in a position to know what the administration of his particular department prior to his becoming chief of the bureau was?—A. Yes, sir; I think so. So far as office contact would be effectual, I was. I never went out into the stations or onto the cars to examine the work that was being done in those places more than once or twice; two or three times. But I knew from Mr. McDonald continually, and sometimes from Professor Baird, what was being done by McDonald.

Q. You staid with him when he was chief from February, 1888, until September, 1889?—A. Yes, sir; I remained with him in the Fish Commission during that period.

Q. Under his management?—A. Yes, sir.

The CHAIRMAN. If there are no further definite questions to ask, will you give us such information as you can touching this general matter into which we are inquiring; into the general management of the affairs of the Commission under Commissioner McDonald, more especially as commented upon in the articles in the New York Press?

A. I shall be happy to do so. I think, however, that justice can not be done to Mr. McDonald by drawing the line at the 18th of February, the time he took the place, for the reason that there was a very large inheritance of things, good, bad, and indifferent, and you can not, in my judgment, understand the value of his administration without taking into consideration some of the previous history and the condition of affairs in the Commission.

The CHAIRMAN. Of course we want to get all the information we can, and still the scope of this inquiry is as to the management of the Fish Commission, the office of the Fish Commission under Mr. McDonald's administration.

Senator SQUIRE. Have you the resolution?

The CHAIRMAN. It is before you. And while it would be very interesting, and I should personally like to know all about the history of the Commission from its inception, still it would open a pretty broad field, and I should suggest that while, as I said, it was valuable and interesting, to please confine yourself to what you consider essential relating to the present Commissioner.

Senator SQUIRE. Does the witness know the purport of the resolution?

The CHAIRMAN (to the witness). Please read the resolution under which we are operating. It will give you an idea of the scope intended by the Senate to be given to the inquiry.

The witness read the resolution.

The CHAIRMAN. After reading that resolution, under the authority of which we act, if you will just state what you desire to state, which in your judgment is proper to come in under that resolution—we have no desire to restrict your statement, only that we have not time to go back to the beginning of this matter—we will be very glad.

The WITNESS. In respect of changes in the force is the first specification in the resolution. There have been considerably many changes in the force. Much that has come to my ears in regard to reasons for changes is, of course, hearsay. I, perhaps, am competent to speak in regard to my own change, and one or two intimately associated with me; but I should not like to speak in general with reference to changes in the force.

By the CHAIRMAN:

Q. Let me just ask you a question right there. You stated a short time ago that after Commissioner McDonald came in, from time to time, you were relieved of certain duties until your remaining duties were those of librarian? Let me ask you this question: Were there new offices created, new appointments made, to take charge of the various matters of which you were relieved, or were they transferred to other existing departments of the office?—A. The work which I did relative to correspondence was taken from me and given to a new officer known as the chief clerk. But the man was an old employé of the Commission, a mere clerk, a stenographer. The work which I did as editor of publications was taken from me and given to a man who at one time had been the editor under Professor Baird. Through dissatisfaction with his work, and his talk about his work, Professor Baird relieved him about 1883 of the editorial work of the Fish Commission and appointed me editor. McDonald returned this editorial work to Dr. Bean and increased his pay.

Q. He was in the service of the Commission?—A. He had been in the service during this time; part of the time devoting his attention to the Commission, and part of the time to the National Museum, as curator of fishes in the National Museum.

Q. Do you say the correspondence was transferred from you to the chief clerk?—A. A new position was created at a salary of \$2,500.

Q. That chief clerk kept the books, the accounts of disbursement, etc.?—A. Oh, no, sir. The Commission has a disbursing officer with several assistants entirely outside of this.

Q. Oh, yes; I did not know. What were the other duties of the chief clerk, besides those transferred to him from your department.—A. Well, very little I think, other than to assist the Commissioner in his correspondence.

Q. The Commissioner attended to a part of this correspondence himself?—A. Yes, sir.

By Senator SQUIRE:

Q. Was there any dissatisfaction expressed as to your work, in either of these branches of your work, by the head of the bureau?—A. No, sir. The Commissioner took pains to tell me that he thought I was overworked; that he thought I had too many responsibilities.

Q. Were you overworked?—A. I made no complaint of overwork.

Q. The inference from your remark is that you were not over-worked.—A. I never complained of overwork in my life, although I have worked twelve and fifteen hours, and considerable of it, too.

Q. Do you work from twelve to fifteen hours now?—A. I do, in the Census Office, voluntarily and with pleasure. I sought the position in the Census Office so that I could work ten or fifteen hours.

Q. What was your salary in the Fish Commission?—A. Two thousand dollars, from the time Professor Baird fixed my salary at that down to the time I left the Fish Commission, and then I went to the Census Office to work at \$6 a day. So that there was not a money inducement for the change.

By the CHAIRMAN:

Q. Pure love of work?—A. I enjoy seeing the fruits of my work, and I can not spend my time, month after month and year after year putting in a fruitless way; and if I am handicapped by a superior officer and prevented from bringing forth fruit I am likely to look where I can produce fruit. That was the fundamental reason for my removing from the Fish Commission to the Census Office.

By Senator SQUIRE:

Q. Because you did not see the fruit?—A. Because I did not have work which I could produce fruits upon. And yet, as I have remarked, at no time did the Commissioner make any complaint or find fault with the work I did, barring one particular time, which I can explain.

The Commissioner spent the summer before last at Wood's Holl. A day or two before he left—

By Senator BLODGET:

Q. You are referring now to Commissioner McDonald?—A. Yes, sir. A day or two before he left he came to my room and reminded me that the Commissioner's report for the year 1887 had not been written. He alluded to the fact that I had written reports for Professor Baird, two or three previous volumes, and asked if I could write a similar report for the 1887 volume. It was the last year of Baird's administration, and not McDonald's.

By the CHAIRMAN:

Q. Before McDonald came in?—A. The last year of Baird's administration had not been written up. He had died and the report had to be written for the last year of his administration. I had written his report for him, prepared the draft and he had examined it, and adopted a very large per cent. of it during previous years. Colonel McDonald asked me to prepare a Commissioner's report for this last year of Professor Baird's administration. That to a certain extent was a hard job to do, because it was to be done in July, August, and the early part of September; but I very cordially expressed my willingness to do so, and immediately set about it.

Before he was ready to return from Wood's Holl I wrote to him that the manuscript was ready for the Printer; that the manuscript could be sent to him to look over at Wood's Holl, or could be sent to the Printer and the proof examined by him. He telegraphed to me to place the manuscript immediately in the hands of the Printer, which I did, and it was put in type, and made about one hundred and twenty-five octavo pages. The previous report of Professor Baird was in one hundred and eighteen printed octavo pages. This was seven pages larger, but was not as much larger as the additional sum of money which had

been expended during that year. When McDonald got back here he found that report in proof ready for him to examine, and he took it with him to Wytheville, where he went to vote in the Presidential election in November. Upon his return he told me that the report would not do at all; that it was too voluminous, and would have to be cut down to about one-half. The report which I prepared was in every respect a counterpart of the preceding reports which had been published in Mr. Baird's name. I pursued the same topics, the same methods of treatment, and it was a report which I am as sure as I am of anything that Mr. Baird would have put his pen to in five minutes if he had been living to sign the report for the last year of his own administration.

Colonel McDonald directed the Government Printing Office to distribute that type, the whole one hundred and twenty-five pages, and he paid them over \$200 for having set the type and distributing it again.

Then he took away from me every trace and vestige of that work and created a new editor, taking very great pains to see that not even a proof of that matter remained in my possession.

After several months the report for that period was published; probably you have it here in your room, the report of 1887. I should like to refer to it in order to corroborate my testimony. It is about sixty-seven pages. A large part of it is the very language which was in my draught, the type of which was all distributed by order of the Commissioner, and then reset in this sixty-seven-page report, if that be the number.

By Senator SQUIRE:

Q. When did that come out?—A. That report was published some time last summer, some eight months later, and the entire volume was not only in print but stereotyped, with the exception of this report, on that day in November when the proof was taken to Wytheville to be looked over.

Q. That was the only case in which he had occasion to find fault with you?—A. The only complaint, that I had made the draught of that report too large. That is the only complaint that Mr. McDonald made in reference to my work from the time he became Commissioner down through these various periods.

By the CHAIRMAN:

Q. Will you state whether, when this work was taken from your hands and put into the hands of the new editor, that was a person who had been employed in the Commission, and was it added to his other duties?—A. It was the man Professor Baird dismissed from the editorial work in 1883.

Q. Is he still in the employ of the Commission?—A. Either in the employ of the Commission or the Museum.

Senator SQUIRE. The point that I understand you to try to draw out, Mr. Chairman, is as to whether this man who was appointed to succeed Mr. Smiley was a new man or whether it was a mere transfer of work from Mr. Smiley to some other man who was in the Commission.

The WITNESS. It was a man who had been connected with the Commission right along.

By Senator BLODGETT:

Q. He had formerly done the same work?—A. At one time.

By Senator SQUIRE:

Q. In 1883?—A. Part of the same work. Professor Baird did part

himself and this man did the other part. Professor Baird never allowed anybody to write a report for him until I got into the way of doing it. He was able in the earlier years to do all himself, to gather the facts and to get the whole thing together. Doctor Bean never did any of that work at all.

Q. Was this man's salary increased when this transfer took place?—

A. Shortly afterwards. It has since been increased.

Q. What was it before and what was it after?—A. He is reported in this newspaper article at \$2,100, which I think is correct.

Q. You mean now?—A. Yes, sir.

Q. What was it before?—A. Oh, it was \$1,800 for several years. I think previous to that \$1,500. You know I can not give you the minute details as to the salary of each man and the changes in salaries.

Q. Would you like to have the committee understand, as a matter of plain fact, that there was an unnecessary expense created by reason of the appointment of other men to do work which you had been doing, which you could well do, just as well as you had done before?—A. Yes, sir; I would be very glad to have the committee understand that as an expression of my judgment.

By the CHAIRMAN:

Q. Let me ask you this question. Would the sum of the increase of the salaries of the men, if there were more than one—I take it there was—to whom your duties were practically transferred, be more than the salary which you drew, so that in total the expense would be increased?—

A. Perhaps the fractional additions which you allude to would not; but the additional clerks appointed and brought into office to help push these people with their work would a great deal more than offset my salary.

By Senator SQUIRE:

Q. You were paid the same salary as when you did all the work?—

A. Yes, sir; for doing a fraction of the work.

Q. How many more men would you say there were to do the work you had done?—A. Well, the work which I did of course I did with a corps of assistants. I had six assistants at the time Mr. McDonald came into office, and when I left the Commission I had three. One of those whom I had at first, and whom I did not have afterwards, a man who was incompetent to assist in this editorial work, proof-reading, etc., and whom I had not dared to allow responsibility in that line, was transferred out from under me and put under this Dr. Bean, who was created editor as my successor and given this line of work to do, which I had not dared to let the fellow do. This man, Mr. Charles W. Scudder, appears to do considerable of the editorial work under Dr. Bean.

Senator SQUIRE. I suppose what the committee wishes to get at is, if it were an unnecessary increase, what it amounted to.

By Senator BLODGETT:

Q. I will ask the witness if he was familiar with the expense of the office the last year of Professor Baird's administration, the expenses of the pay-roll, put it in that shape, for office work the last year of Professor Baird's administration?—A. I was somewhat familiar with that.

Q. Could you give us that amount?—A. No, I can not give you the amount, but the number of persons has increased considerably. There is a considerable increase.

Q. Now give us the amount for the next year?—A. There is a considerable increase in the amount of money paid for office work.

Senator SQUIRE. I was trying to get at the particular work he did, not the whole of it.

Senator BLODGETT. You understand, Senator, in transferring duties, there may be a time when, perhaps, the expense may seem to be a little larger. I can understand how that would be. Charges of extravagance have been made here. Taking the year through, comparing the last year of Professor Baird's administration with the first year of Mr. McDonald's administration would show whether there have been extravagancies under him.

The CHAIRMAN. If the witness does not know the total under Mr. Baird's administration, the committee can find that out from the books of the Commission.

Senator SQUIRE. In regard to this particular branch of the business that this witness was conversant with, actively and personally, of course he might be competent to enlighten the committee about that part of it. That seems to be the point we have been talking about. I was trying to boil it down, to try to get it into dollars and cents.

Senator BLODGETT. So far as he was personally concerned.

The WITNESS. By taking a little time to prepare myself on that point perhaps I could give you something definite. Of course off-hand it is not easy for a man to give a mathematical computation. My impression is that the work cost at least a third more after the transfer than before.

By the CHAIRMAN:

Q. You say that when you had all these duties to discharge and the responsibilities which you speak of you had six employés under you; after that you were relieved of several branches of the work, and up to the time you were removed you had three? Did I so understand you?—A. There were three at the time I left; I was not removed.

Q. I understand you resigned. I would like to ask this question. I think you have stated that up to the time of your leaving the office you did not complain of overwork, and rather gave us to understand that the work after these various things were taken from your supervision was pretty light. Was that the idea?—A. The responsibilities were very light; very light indeed.

Q. The occupation, the work, as you may call it?—A. The work. That would be true of the work that was required of me. As a matter of fact I tried to make myself useful——

The CHAIRMAN. Of course.

The WITNESS. And proposed one or two things, not very important, which the Commissioner allowed me to go ahead and do and occupy my attention with.

By the CHAIRMAN:

Q. You say you had three employés under you. Were they more than it was necessary to have; could you have gotten along with less, probably?—A. I could by dropping one or two lines of work that I did pursue. I pursued the lines of work, and kept the people as busy as I considered the generality of employés in the building were kept busy, which was about two thirds what they used to do under Professor Baird's administration.

Q. Did you at any time recommend or suggest to Commissioner McDonald that he could reduce expenses by dispensing with one or any of the three employés under you?—A. No, sir; I did not. I sought to employ them profitably as long as he chose to leave them with me.

Q. In the former part of your examination you said the work was very light after the various transfers were made, and you wanted to get where you could make yourself useful and produce better results. I merely wanted to know whether you suggested to the Commissioner that expenses might be reduced by discharging any of these employés?—A. No; I took the other tack of trying to occupy them as profitably as I could, and I proposed one line of work which I can cite and with which I occupied them.

I undertook to ascertain precisely which of about 25 volumes that the Commission has published, first and last, were contained in every public library in the United States, in order that that information might be published and sent to the people who make applications for reports, and who can not be supplied. The information should be sent to them, showing just what public libraries they would find those identical volumes in, and I occupied a considerable portion of my leisure time the last three or four months in corresponding with these libraries and gathering together that information and tabulating it.

By Senator SQUIRE:

Q. You suggested that idea?—A. I proposed it and the Commissioner approved of my carrying it out.

Q. You did this in order to make employment for these clerks?—A. Because I thought it was a very useful thing to be done, and would afford work for these employés. I did it because I thought it ought to be done. I had had charge of the distribution of documents for years, and our stock was reduced so low that nineteen out of every twenty applications had to be refused. In refusing a man's application for a Fish Commission Report, it struck me that the nice thing to do was to tell him just where he could consult that report. If he was living in New York City, I proposed to send him a list of fifteen libraries, in any of which he could see that report. If he lived in Albany, I could send him a list of three libraries. If he lived in San Francisco, I could refer him to about five libraries where he could see these reports. My proposition was that these lists should be published, so that in refusing reports we could simply inclose this list.

Q. Is it the custom of the bureau to furnish at least one public library in every State and Territory?—A. The distribution of reports up to that time had been unsystematic as to libraries, and part of my scheme, which I have thus far described, was to supply the gaps in these libraries. I recommended to the Commissioner the forwarding of volumes to supply gaps to the amount of at least 5,000 volumes, which were sent out from the Fish Commission stock to fill the gaps in these libraries, as I found they had gaps. So that I undertake to say to-day the public libraries of the United States, important libraries of the United States, have a much larger percentage of completed, or very nearly completed, sets of Fish Commission reports than any other Government reports.

Q. Take the libraries of the far West, have they been forwarded the reports?—A. I took up every library in the whole United States that had 500 or more volumes in it, and I asked them what they had of our books, and what they lacked, and so far as they reported their lacks to me I recommended to the Commissioner to supply the gaps, and he approved of my recommendation in every case.

You ask me about the newspaper article. There are some things in it that I never heard or dreamed of.

Senator BLODGETT. Foreign to this investigation?

The WITNESS (reading).

He—

Referring to Mr. McDonald—

found in office 99 employés. The great majority of them were experienced in the duties involving upon them. Within a very few months many of them were discharged, presumably on account of their politics. Democrats unacquainted with the duties of the office were installed in their places.

So faithful has McDonald been in his devotion to the Democracy that he has found lucrative positions for no less than 164 of his friends. Although Professor Baird ran the Commission with less than 100, McDonald finds it difficult to make it half as effective with 211.

Now, I think that Baird did run it with about 99 employés. I think that to be the case. I should say that there were nearly 200 now.

By Senator BLODGETT:

Q. You are speaking now of the last year of Professor Baird's administration?—A. Yes, sir.

Q. What has been the ratio of increase from year to year of employés, would you say. I suppose it was considerably less ten years ago?—A. Baird never increased ten per year.

Q. Ten per cent.?—A. Baird never made an increase of more than ten persons per year. That is my recollection. This intimation that McDonald has worked this thing in the interest of Democracy is in my judgment all nonsense.

The CHAIRMAN. I agree with you as to that.

The WITNESS. McDonald is a Democrat, as he was a Confederate during the war, and fought like a tiger for four years on that side, and he is very fond of referring to his war history. But the Fish Commission has never been under political control. Baird never allowed politics to be considered at all, and when Baird died I suppose there were practically as many Democrats as Republicans, or, to put it in a stronger light, I never knew what the politics of two-thirds of the employés under Professor Baird's administration was.

By the CHAIRMAN:

Q. Let me ask you this question right here. Have you any reason to believe that the management in that regard has been different under Commissioner McDonald?—A. There has been a slight difference, but only slight. Baird was a strong man. McDonald is a weak man. McDonald yields to solicitation and importunity, as Baird never did. Solicitation and importunity have come upon McDonald, being appointed by a Democratic President from that quarter, and without McDonald really intending to increase the Democratic contingent he has yielded to solicitation, and the result probably is that more Democrats than Republicans have come in under McDonald; but not with the distinct purpose on McDonald's part of making it a Democratic organization.

The CHAIRMAN. I think that is the fact.

By Senator SQUIRE:

Q. What is the fact, so far as you know, in regard to accessions to the force since McDonald came in; has there been any test as to a man being a Democrat or Republican; has any point of that sort been raised?—A. Not usually. I understand that my office of librarian has just been filled with a political selection.

Q. Since the present administration came in?—A. Within two or three weeks.

Q. A Democrat appointed?—A. He is said to be a Republican, but it is purely a political appointment.

Q. It is said to be?—A. Said to be; I do not know anything about it myself.

By the CHAIRMAN:

Q. Do you know the party?—A. No, sir.

By Senator BLODGETT:

Q. What do you call a political appointment?—A. I call a political appointment one made upon the testimony of members of Congress or Senators that the man is competent and suitable for the place and that they desire him to have the place.

By Senator SQUIRE:

Q. As a matter of political patronage?

By the CHAIRMAN:

Q. Because he is competent or because he is a partisan?—A. They never say that in their letters.

By Senator SQUIRE:

Q. Do they not say he is a good Republican or a good Democrat in their letters sometimes?—A. The Senators and members are pretty careful not to say, but the collateral letters which come up from the back counties usually specify, so that the Senator or Representative does not need to allude to that.

By Senator BLODGETT:

Q. Suppose two Republican Senators should come here and ask for the appointment of a man, would you regard that as a political appointment? We suppose every man has some politics, you know.—A. Where a Government official, a commissioner, makes an appointment without investigating the case—without investigating the qualifications of the applicant himself, but makes the appointment on a recommendation coming from this building, trusting to gentlemen here who have made the recommendation and the request—I call that a political appointment.

Q. How, then, can appointments be made except upon the recommendation of men? It is not supposed that the Commissioner knows every man whom he appoints, and he must take the word of men, should he not, as to the qualifications of the appointee? Now he takes the word of a member of Congress, for instance, of one side or of both sides; does it necessarily follow that it is a political appointment?—A. It follows that it is a political appointment, according to my definition of political appointments. You may have some other definition.

Senator BLODGETT. I have recommended men as being good men and suitable for the position under Republican administration; I am doing it very frequently. I know them to be good and competent men, and say so. I do not ask the administration to appoint them because they are Democrats or Republicans; and I know that a great many Republicans indorsed men who were applicants to office under Mr. Cleveland's administration.

Senator SQUIRE. There are certain offices, Mr. Senator, that it is expected that the word of a Democratic member of Congress or Senator in commendation of a man is valuable, because that relieves it to

some extent from a partisan character, where both sides are represented. Then again there are cases where it is expected by a Republican administration that a Democrat will be appointed.

Senator BLODGETT. Going beyond that, when we come to speak of the fitness of a man, I understand they have got to have the indorsement of men who know all about it. I understand that to be the case, and I should think it would be a wise thing for the Fish Commissioner to have the indorsement of such men, without regard to their politics.

By Senator BLODGETT:

Q. A man was appointed as a Republican to take your place?—A. Within two or three weeks.

Q. Suppose he was recommended by Republicans, or Republicans exclusively, would that be an objection to his appointment, if he is a valuable man.—A. I do not object to political appointments myself. I have from 75 to 100 employés in the Census Office under my direction, and almost without exception they are political appointees, according to my definition of political appointments. Now, whenever a clerk comes there who is not satisfactory to me I dispense with him just as quickly—

Q. I recommended a young lady for appointment there, and she was appointed. Somebody might charge Mr. Porter with appointing a Democrat on a Democratic recommendation?—A. If you will go down there you will find we have got her charged to your State.

By the CHAIRMAN:

Q. You have not got her charged as to whether she is a Democrat or Republican. I will ask you whether in the dismissals and appointments which have been made by Mr. McDonald, to your own knowledge or in your belief, such appointments and dismissals have been made on political grounds?—A. I do not think they have.

The CHAIRMAN. That covers the ground.

Senator BLODGETT. That covers it all.

By Senator SQUIRE:

Q. Now as regards this alleged favoritism. The resolution reads:

Especially in respect of changes in the force, compensation paid to employés, and any alleged favoritism or other undue administration.

A. A large number of changes have taken place down there, not being due to politics, must be explained. I explain that in the personal character of the Commissioner. He is a man of very nervous temperament. He was prostrated in sickness at the time he was appointed and confirmed Commissioner. He has, in my judgment, been in that continued state of nervous prostration during these two years, and it has unfitted him for the duties of the office. With good motives and a poor body the colonel has done unwise things. He has made unwise changes in the force of employés. He has allowed the force that he had to loaf to an extent which is utterly unjustifiable, and has put in more people to help do the work. He has, while supposing and believing that he was a magnificent disciplinarian and scolding people roundly, and all that sort of thing, allowed them to run away with him and do as they pleased. They come strolling in anywhere from a quarter after nine, half past nine, quarter to ten, ten o'clock to half-past. They put on their hats and go out at noon and stay a half hour, three-quarters of an hour or more, without leave or license. They leave their desks and are away from the building before four o'clock. I

found it utterly impossible to maintain the discipline which I had been accustomed to maintain under Baird and which I maintain in the Census Office, under McDonald as Commissioner in the Fish Commission.

Since I have been in the Census Office I have had occasion to send Census Office clerks to the Fish Commission building to work on public records. Those clerks invariably come back and remark to me about the laziness and looseness of affairs in the Fish Commission; about the clerks reading papers there, their not attending to their work; and even twitting them, Census Office clerks, about working hard from 9 until 4, and telling them that they do not do that way in the Fish Commission, and commiserating them, pitying them, that they have to work under Mr. Smiley from 9 until 4, with a half hour's intermission for lunch. If they knew that sometimes I bring them down to the Census Office in the evening at 7 o'clock and work them till 11 additionally, I think the pity would know no bounds.

By Senator SQUIRE:

Q. Now, in regard to favoritism?—A. Owing to this condition of the Commissioner's health and mind he forms prejudices rapidly. He either thinks a good deal of an employé he has got there or he thinks very little. It is one extreme or the other, and his conduct is so outspoken, he acts out in actions so, that the employés all understand immediately what McDonald thinks of them. If they are in favor with him they pursue an amount of personal liberty which we do not tolerate in the Census Office, and if they are not in favor with him they lose interest in their work. There is a gross and deplorable lack of *esprit de corps*. There is very little *esprit de corps* there. There are very few people there who take an interest in their work. They go there and stick as near the hours as they think they must, and they draw their salaries regularly, but they take very little interest in their work. They talk a good deal about the things that they like and the things they do not like, some complaining about the commissioner and complaining about this and that and they struggle with the other to see which shall have the easiest time. The thing goes on in that sort of a way. Of course, these remarks apply to the period I was there.

By the CHAIRMAN:

Q. I was going to ask you how you were so familiar with it, not being there?—A. Except where specified, what I have said applies to the period I was there.

By Senator BLODGETT:

Q. Are the chiefs of divisions in the Fish Commission responsible for the good conduct of employés?—A. Presumably they are, but chiefs of divisions themselves are absent when they should be on duty, and so of course they do not know what the clerks are doing.

Q. During the time you were there were you always on duty?—A. Oh, no, sir; I was not always on duty either.

By the CHAIRMAN:

Q. Some of your clerks might have gone off before 4 o'clock without your knowing it?—A. Yes, sir.

By Senator BLODGETT:

Q. The general responsibility was really with you and not with Colonel McDonald?—A. I conformed my division as nearly as practicable to the general custom of the office, and if the chief clerk and the

clerks in his office went off at 3 o'clock I did not raise any objection to the clerks in my office going off at 3 o'clock.

By the CHAIRMAN:

Q. So that the chiefs of divisions rather followed each other?—A. Somewhat followed the example set by this chief clerk.

Q. The Commissioner is responsible for them?—A. Of course the Commissioner is responsible for all this state of affairs.

Q. He is the head man?—A. The Commissioner never called upon me at any time to know whether they worked the full hours, or any thing of the kind. If he had called on me and asked about it I would have told him——

By Senator BLODGETT:

Q. And an intimation from him to any of the chiefs would have removed the difficulty?—A. If it was given in the right way.

By the CHAIRMAN:

Q. If you had said to the Commissioner, "My clerks are not very prompt," might he then have directed you to reprimand them for their tardiness and lack of attention?—A. He could answer that question better than I. I looked out to keep them within such limits that they would not be ringleaders. I never allowed them to be ringleaders in this demoralized state of affairs.

Q. They sort of drifted with the others?—A. Yes, sir; I allowed things in many ways to drift along the last year I was there that I never would have done before. For instance, I gave out a considerably larger amount of stationery the last year I was there per capita than I had given out in any previous year.

Q. Why was that?—A. Because the requisitions came down to me from the chief clerk's office bearing the stamped autograph, "M. McDonald." The Commissioner never saw them at all, but somebody in the chief clerk's office stamped this rubber-stamp, "M. McDonald," on, and they came to me. I found, on calling the attention of the Commissioner once or twice to the stationery question, that he did not wish me to raise any question in regard to the extravagant use of stationery, and so I desisted and filled the requisitions without question.

By Senator BLODGETT:

Q. The use of the stamp was authorized by the Commissioner.—A. Yes, sir; and in common use, the same stamp on which money was disbursed.

By Senator SQUIRE:

Q. You called the attention of the Commissioner to this?—A. Yes, sir; I called the attention of Colonel McDonald, both verbally and in writing, to what I considered the too bountiful use of stationery.

Q. Did you ever call his attention to any other irregularities there?—A. I think very likely I did. I have always been very outspoken in such matters, and yet I do not at this moment recall any instances.

By the CHAIRMAN:

Q. Are there any other points in the article which you have before you upon which you would like to comment, or upon which you will comment, in order to give us light on the subject?—A. I suppose we have finished the question of changes in the force, my testimony being that it is not Democratic influence, but to a considerable extent an unwise change of force due to the weakness of the Commissioner, yield-

ing to the pressure of this man and that man to have his friends given places and having work re-arranged to please.

Q. Not being especially political?—A. No, sir.

By Senator BLODGETT:

Q. Do you mean to convey the impression that stationery was squandered; that it was stolen, or that it did not go the proper use; you say a large amount of it was used, more than previously?—A. I could not know its final disposition. A requisition would come to me to furnish such a division, or such a car, or such a vessel a certain amount of stationery, and I delivered it to these various destinations. What became of it thereafter I have no means of knowing. But the requisitions being larger than they had been under Baird's administration I felt called upon to direct the colonel's attention to it; and the colonel intimated to me that he thought there had been too much penuriousness about the stationery question, and he wanted I should issue without comment the stationery which was properly asked for, namely, which had this rubber stamp on.

Q. It was department stationery, with the heading on the paper and envelopes, etc.?—A. All kinds of stationery; every conceivable thing that is used about clerical work.

I do not want this committee to understand that this was a large matter. It was a comparatively trivial matter, and it was confined perhaps to a few hundred dollars' worth of stationery, but this has come out in answer to the question of the Senator as to whether I had at any time directed the attention of the Commissioner to supposed matters of abuse.

By the CHAIRMAN:

Q. Let me ask you a question touching this. I do not consider it very important, but still I will ask it. There have been, as I understand it, and as I know, new hatching stations established and an increase in the force, in the business of the office, and would not that of course lead to an increased demand and use of stationery?—A. Naturally, but only to a certain extent. That of course would be considered. I never raised any objection, of course, to giving out stationery for a new station.

Q. But the fact that there was a new station established would call for more stationery than if it had not been established, would it not?—A. Yes, it would call for more stationery in the grand total, and it would tend to some extent to explain the increased expenditure.

By Senator SQUIRE:

Q. What kind of stationery, general stationery, all sorts of office things?—A. Yes, sir; paper, envelopes, pens, inks, blotters.

By the CHAIRMAN:

Q. Pen racks?—A. Yes, sir; everything, all sorts of things that are used about office work.

Senator SQUIRE. You started a few moments ago to look the article over.

The WITNESS (reading):

A few weeks ago Frank Blaisdell, a draughtsman, incurred McDonald's displeasure. Blaisdell is a member of the Loyal Legion, and his father was General Blaisdell, the Massachusetts hero, who was killed at Petersburg. Blaisdell's salary was \$150 per month, and McDonald reduced it to \$100, and presented the extra \$50 to S. G. Worth, one of his favorites.

I believe those statements to be true. Of course you will call Mr. Blaisdell here and hear from him about it.

By the CHAIRMAN:

Q. He is a Massachusetts man?—A. He is a Massachusetts man.

The WITNESS (reading):

Those outside of McDonald's ring, who have enjoyed these little excursions, have frequently asked how he could afford such lavish entertainments. The reply invariably has been, "Oh, the Government pays for it; Mac.'s his own boss." Welcome guests on these trips, and especially at the feasts held at the Washington station, have been Senator Arthur P. Gorman, Eugene Higgins, and many Southern Democratic leaders.

I have a clerk in the Census Office, Mr. Z. Vance Harris, of North Carolina, who has been one of the workmen at Fort Washington station. Mr. Harris has told me that he has seen an unwarranted amount of intemperance at that station.

Q. Do you know how many men there are at that station?—A. It is only a temporary station. It starts usually in April. It is simply during the shad season.

Q. How many do you suppose?—A. Well, a half a dozen is enough to run the station.

McDonald, however, hit upon a plan for selling fish, oysters, and clams, and applying the proceeds to buying beverages.

I know that it has been a practice at that station for a number of years to haul Government seine and catch shad for the purpose of taking eggs. The shad so caught have for some years, and I suppose down to the present time, been sold, by the direction of the Commissioner, in the Washington market, and I do not think that the proceeds of the sale of those shad, collected with the Government seine, have ever been turned into the Treasury. That is a very easy matter for you to test. I have always understood that there was certain use made of that money. The words "oysters and clams" ought not to be there. I do not think McDonald has ever sold oysters and clams. It is only the fish, and it is only the shad which are sold. Under Professor Baird's administration it was arranged that that money, gotten from the sale of shad, should be used somewhat like the slush fund in the Navy—to buy things with that could not be gotten through the Treasury Department on Government account.

Q. That was the custom under Commissioner Baird?—A. Yes, sir; under Commissioner Baird, and it has presumably been perpetuated under McDonald.

By Senator SQUIRE:

Q. Has there been any change; has a greater amount of fish been taken; is the amount realized greater now than under Professor Baird's administration?—A. It is about the same.

By the CHAIRMAN:

Q. It is not a large amount any way?—A. Professor Baird never allowed that fish fund to be used for whisky or drinks. It is charged here—a matter that I know nothing about—that that fund was used for buying beverages.

By Senator SQUIRE:

Q. What was it used for under Professor Baird's administration?—A. Well, Mr. Baird just liked to have the Senators and members taken

down there to see what was going on, what was being done. Of course there was some expense——

Q. For entertaining?—A. In connection with these trips, but they never included drinks.

By Senator BLODGETT:

Q. Lemonade, I suppose?—A. I never went on one of the trips myself, and I do not know. I have heard Mr. Baird and others talk about it, and I have heard Mr. Baird instruct his superintendent. Baird never had an intemperate man in charge of the Fort Washington station.

By the CHAIRMAN:

Q. Nor anywhere?—A. Not if he knew it. But Mr. McDonald has had Mr. S. G. Worth in charge of that station each year. Mr. Worth is a pretty efficient kind of man, is an efficient propagator. Mr. Worth is one of the more capable men in the propagation force of the Fish Commission, but he has the unfortunate habit of drinking. He drinks considerable at times. He did in North Carolina before he left the State commission there. I have been told that he was dismissed from the North Carolina commission, and the commission broken up on that account. Mr. J. F. Oertell, who was employed there with Worth and knows the circumstances, gave me that information.

Q. Have you any reason to believe that the intemperance of this man, who is in charge there, is apt to interfere with the proper discharge of his duties?—A. Well, Senator, I am inclined to believe on general principles that intemperate habits always interfere with the efficiency of a man, but not in an especially striking manner as in the case of Mr. Worth.

The CHAIRMAN. I was down there once. I liked his appearance.

The WITNESS. For instance, I should not allow anybody to call Mr. Worth a drunkard in my presence, or anything of that sort. Mr. Worth is straight a large part of the time. Whenever I have seen him under the influence of liquor it has been down on that station or off on some vessel or at some place that was semi-social and semi-business.

By Senator BLODGETT:

Q. So far as these charges go, then, you have no personal knowledge of their truth?

The WITNESS. Which ones?

Senator BLODGETT. The charge that money has been applied for beverages. Is not that the way it reads?

A. I do not know anything about the converting of money into beverages of my own knowledge. I do not know what they converted it into.

By the CHAIRMAN:

Q. Do you know whether it has been turned into the Treasury or credited on the books of the Commission?—A. I suggested that the Treasury accounts would show.

By Senator SQUIRE:

Q. I understood you to say awhile ago that it had not been the custom at any time.—A. That has been my understanding.

Q. At any time, that it had not been accounted for?—A. I never knew that it was accounted for to the Treasury, and I have known that it was not accounted for.

By Senator BLODGETT:

Q. Under Mr. Baird it was used for petty cash about the office?—A. Petty cash about this station to meet expenses, for the entertainment of people who had some right to know. Senators and members have a right to know what is going on at Fort Washington. It is no very serious thing to give them a little something to eat if you keep them down there any time.

By Senator SQUIRE:

Q. How much would you say the sum received from the sale of fish would amount to in a year?

The WITNESS. How much they get for the fish in the course of a year?

Senator SQUIRE. Yes, sir.

A. They could not get more than \$75 to \$100.

Q. In a year?—A. I do not think they could, I do not care to say anything more about this article.

By the CHAIRMAN:

Q. You have touched upon almost all the points, have you not?—A. This is not the kind of an article that I should want to write if I were going to expose what I consider to be the weaknesses of the Fish Commission.

Now if you were going to interrogate me about the weaknesses of the Fish Commission and go into the general subject of what it has done, and what it has not done, and what it ought to do, I should cut entirely loose of anything of this sort. But you have confined me. That would take in some broad general principles as to what the Commission ought to do and what it has done.

The CHAIRMAN. Of course that is very interesting, but it would hardly come under the purview of this resolution. The whole subject is exceedingly interesting, and if it were not for making the examination too long and the report too voluminous, we would be very glad to hear it.

The WITNESS. It would be entirely possible, of course, if some hot-headed and not very able man has written an attack of this sort upon the Fish Commission and your committee investigate this and report that there is nothing in it—of course, it is very easy for the inference to be drawn, an unjust inference to be drawn, that you approve the general management and conduct of the Commission.

The CHAIRMAN. That would not be the inference, for we were not directed to inquire as to that.

The WITNESS. During the past two years of McDonald's administration and a number of years previous under Baird, extremely little has been known by Senators and members of Congress who have voted the money, as to the manner in which the Fish Commission was managed. I can scarcely imagine so little attention paid to any branch of Government affairs in Washington. That grew out of the unbounded confidence which everybody had in Baird.

The CHAIRMAN. I think that is true.

The WITNESS. So that down to the present moment the gentlemen connected with the fishery committees in the upper and lower house both seemed to have allowed the present Commissioner to inherit the unbounded confidence they had in Baird. Therefore extremely little is known here about the manner in which money has been expended, about the results, or professed results, obtained from the expenditure of this money, amounting to more than \$2,000,000 all told.

By Senator SQUIRE :

Q. Since the inception of the Fish Commission?—A. Yes, sir. The Commissioner is not under the direction of any cabinet officer, and, therefore, has never had anybody to consider this question, or to know what he was doing.

By the CHAIRMAN :

Q. He only reports to Congress?—A. And he, practically, only approaches the appropriations committees.

The CHAIRMAN. I say he only reports to Congress.

The WITNESS. Oh, he reports to Congress directly, and Congress, in pursuance of that unbounded confidence that it had in Baird, has appropriated lump sums of money for this Commissioner, who is responsible to no one but Congress, to spend as he pleases.

By the CHAIRMAN :

Q. You know the estimates, say so much for this work and so much for that?—A. An estimate of \$130,000 for the propagation of food-fishes, and the committee never inquires how that is to be distributed. Now, I think that this committee will be well satisfied if it made the inquiry into the affair; that that appropriation ought not to be made in a lump sum of \$130,000, to be disbursed in the discretion of one man only, and that it ought to be divided; and say so much for salaries, such and such a class, which would prevent the appointing of a large number of people at high salaries to do very medium sort of work.

Q. The Geological Survey is the same?—A. That would be the same as other departments.

Q. The Geological Survey appropriation is made in a lump sum, put into the hands of Major Powell, and he does as he pleases with it?—A. And the survey has been in hot water for the last three years on that account. Now, if this committee takes an interest in having a Fish Commission, which shall be of actual benefit to the United States, to the full extent of the money given it to disburse, I should be very glad indeed if the committee would inform itself fully about the work that the Commission does and satisfy itself what is done, and stand ready to advise the Commissioner in regard to matters with reference to which you could give this advice.

Q. Is there any thing further you wish to say in regard to this article?—A. No, sir. There was an article published in the Baltimore American the other day. They had an article which is enormously more worthy of your attention than this. This is venomous in certain particulars.

Q. Do you know the date?—A. The first of the week; Monday, probably.

TESTIMONY OF STEPHEN C. BROWN.

STEPHEN C. BROWN, being duly sworn and examined, testified as follows:

By the CHAIRMAN :

Q. What is your full name?—A. Stephen C. Brown.

Q. Your residence?—A. Washington.

Q. Have you at any time been connected with the United States Fish Commission?—A. I was at one time, under Professor Baird.

Q. Do you remember the years?—A. I worked indirectly with the Commission for eleven years, for nine years under Professor Baird.

Q. What was the character of your work?—A. Professor Baird, as you know, was secretary of the Smithsonian, the National Museum, and Commissioner of Fisheries. My work was then, as it is now, connected with the three Departments; in the Fish Commission itself connected more directly with transportation, shipments, and receipts. That was what I had principally to do at that time.

Q. How long since your connection with the work in the Fish Commission has ceased? How recently have you been employed in any way there?—A. I ceased through the death of Professor Baird.

Q. Did you read an article published May 25, which you have before you there, in the New York Press, which makes various statements in regard to the administration of the Fish Commission?—A. Yes, sir; I have seen it.

Q. Have you any knowledge of any of the statements or charges therein made?

The WITNESS. In what particular?

The CHAIRMAN. Take them as you please; there are lots of them. If you know anything as to any of these charges just state it in your own way and as briefly as is consistent.

A. Just before Professor Baird died he wrote a letter to President Cleveland naming Maj. T. F. Furguson as his successor. I believe that to be true. I have been told so by Major Furguson himself. That is a matter of record; the letter has been printed and copied. But of course it is unnecessary to enter into that. That was put in, I suppose, probably, to offset a counter-statement on the other side that this man was Professor Baird's choice.

Of the charges presented in the Senate I know nothing.

While there is a great deal of truth in that list, it is not accurate. In some cases salaries are too high and others too little. I only state what I know according to the Blue Book.

The CHAIRMAN. I know the statement is incorrect as to salaries.

The WITNESS. And it does not include all the relatives.

By the CHAIRMAN:

Q. What knowledge have you of Commissioner McDonald appointing relatives in the Commission?—A. Nothing, only what is published in the Blue Book.

Q. It is not stated in the Blue Book that they are relatives of his?—A. No, sir.

Q. Do you know that any of the employés appointed by Commissioner McDonald are relatives?—A. I have always understood that Francis McCormick is a nephew of Mrs. McDonald. The two Lewises I have been told married a brother and sister of Mrs. McDonald, but I could not state positively, because I do not know. Mr. Blaisdell knows that, and can tell you just how it is. I may be a little mixed, and I do not want to be.

Q. They were appointed by Mr. McDonald?—A. Yes, sir.

Q. One of the points made in that article is that appointments have been made with a view to political matters, that Commissioner McDonald had made appointments hinging upon politics; what do you know about that?—A. I can not say that I know anything of that beyond the States from which they appear to come. Of course I am not supposed to know the motives that actuate the doings of any man.

Q. As to new appointees, do you know anything about their politics, and have you any reason to believe they were appointed simply because they were Democrats or Republicans?—A. I think a great many of

those appointed recently have been from his own and other States in that locality, Virginia and Maryland.

Q. As Democrats?—A. Of course I have never asked any of them what their politics was.

Q. Well, what do you suppose was their politics?—A. I could not state positively as to whether they were Democrats or Republicans.

Q. There are various other charges in the article you have read. Is there anything in regard to any of these charges which you have knowledge of and can inform the committee? We want light on this question.—A. His record here I think was pretty thoroughly discussed at the time of his confirmation. Of course I was not there.

Q. Can you give us any information upon any of the charges which are made in that article?—A. I do not see much in here, but, as I said, the question of his record has already been brought out. The statement that he burned the bridge at Berlin when an attaché of the Corps of Engineers, in order to prevent the passage of the Union Army into Virginia, I believe to be true.

The CHAIRMAN. We do not want to go into that. We have agreed to bury all those things. [Laughter.] As to anything relating to the administration of the office is what we care about.

The WITNESS. I do not see much in here.

By Senator SQUIRE:

Q. Can you give us any information as to favoritism shown employés?—A. Favoritism? Have you a copy of the rolls? You take now, for instance, this man Mr. Worth; he was employed under Professor Baird in 1887 at \$60 a month. We find him in April, 1890, drawing \$1,800 a year.

By the CHAIRMAN:

Q. What position does he occupy?—A. Superintendent of the central station.

Q. Of the station down here?—A. Yes, sir.

Q. What position did he occupy under Professor Baird?—A. He was engaged in the shad propogation at the station. He used to be down in North Carolina.

Q. He has been with the Commission quite a number of years?—A. He has been with the Commission—I would not attempt to state the time. He was on the Commission in North Carolina. He afterwards appears in North Carolina as superintendent of fisheries under the department of agriculture of that State. I think he had been on the United States Fish Commission for about two years. The man who was superintendent under Professor Baird happened to be a namesake, but no relation, and came from New York State. The colonel's first words to me—one of his first words—going out of the north door, was, "I am glad I am now in a position where I can do something for some of my friends. I can do something for Brown." What has he done? Brown's salary is \$100, as it was under Professor Baird. One of the first things he did was to bring on a man by the name of William P. Seal, of Philadelphia, and put him in charge. At the close of the season he appointed Mr. Worth as superintendent, and that has gone on until his salary is \$1,800. He has received the largest increase of any employé in the Commission, \$1,080 in less than two years. His chief clerk, J. J. O'Conner, received \$115 a month under Professor Baird.

Q. In what capacity?—A. Chief clerk. He is there to-day receiving \$2,400.

Q. He was in the Commission under Commissioner Baird?—A. Yes, sir.

Q. And has been there many years?—A. He has been there seven or eight years; perhaps more.

Q. And is now advanced to the chief clerkship?—A. Yes, sir. Captain Collins under Professor Baird received \$1,800. It appears now that he is drawing \$2,700.

By Senator SQUIRE:

Q. What does he do?—A. As I understand it he is in charge of the statistical inquiries, a part of the work that used to be performed by Mr. Smiley.

By the CHAIRMAN:

Q. I will read you the resolution authorizing this committee to conduct this inquiry?

[The chairman read the resolution.]

Q. Now, that is what has been submitted to us. If you can give us any light on that, if you have any statements to make affecting the administration of the office, and so on, we will be glad to have you do it in your own way. We do not know what you know about it and consequently can not make exactly the proper inquiries.—A. In regard to favoritism, take this man Collins. He has a brother, D. E. Collins, who appears on the rolls. He has a daughter, Miss Lillian Collins, who appears on the rolls, who, according to the Blue Book, is charged to Maryland. I doubt if she ever lived in Maryland up to the day of her appointment. George Collins's name appears.

Q. Do you know whether he is connected with the other Collins?—A. That is one question I would like to have solved. S. J. Morton and J. Morton, Gloucester, Mass.—

Q. What about them?—A. It has been reported that they are brothers-in-law of Capt. Collins.

Q. Do you know that to be a fact?—A. No, sir.

Q. You do not know whether they are good officials?—A. I do not think that I am in a position to judge as to their capacity or efficiency. Tarleton H. Bean, who was ichthyologist and editor of the Fish Commission—

Q. What about him?—A. Under Professor Baird he drew \$2,100. To day he is drawing \$2,400 a year. He has a brother in the National Museum.

Q. That is not connected with the Fish Commission?—A. No, sir. It is a Government institution.

Q. He might have three or four other brothers in the Interior Department?—A. A. B. Herr is said to be a cousin of Dr. Bean. He is in the employ of the Commission, too, and appointed May 1.

Q. In the employ of the Fish Commission?—A. Yes, sir. Mr. Rathbun under Professor Baird was drawing, I believe, \$2,000. Under Commissioner McDonald he draws \$2,700.

Q. Does he occupy the same position as he did then?—A. Well, I think he has a little different title. At present he is designated as in charge of the scientific inquiry.

Q. Which is a promotion in point of responsibility?—A. I think the duties and responsibilities are about the same now as they were under Professor Baird.

By Senator BLODGETT:

Q. Has he additional duties?—A. I could not say about that. Of course I am not in the inside of the Commission.

By the CHAIRMAN:

Q. He has been in the employ of the Commission for quite a number of years?—A. Yes, sir; he went with the Commission on the summer trips when they were working on the coast year by year under Professor Baird, and the students were allowed to go down and pursue their studies in natural history. I should like to know why Professor Verill and his assistant were dropped out.

By Senator SQUIRE:

Q. They have been dropped from the rolls?—A. Yes, sir; their names do not appear. Then there are the two Miss Bushes.

Q. Do you know these people?—A. I know Professor Baird had a high regard for him.

By the CHAIRMAN:

Q. Do you know why he has dropped out?—A. I do not. I know that Commissioner Baird had a very high regard for him and the work performed by him.

Q. You do not know whether he resigned or not?—A. No, sir; I do not.

Senator SQUIRE. The main point of this witness's testimony seems to be as to changes in the rolls. That is the only point you have in mind?

The WITNESS. I suppose there will be a further chance for some of the witnesses to again appear before the committee?

The CHAIRMAN. We can not go back, and unless there is some special reason we would like to hear from you everything that you desire to say to us now, because we have a great many things to attend to upstairs. We can not retrace our steps very well. Just give us any information that you desire to now.

The WITNESS. There are several points to be taken up in that line. The question of his interest in patents used by the Government, trips across the continent, and other trips at Government expense.

By the CHAIRMAN:

Q. What about the patents?—A. He is interested in the McDonald fish-way patent.

Q. As the inventor?—A. He claims to be the inventor, and Congress has appropriated \$50,000 for Great Falls and an additional \$25,000 to apply it, which has not yet been done.

Q. Has Mr. McDonald received anything from the Government for the use of the patent?—A. I do not know that he has. But there is a clause in the river and harbor bill of 1888 and '89 that the Secretary of War is empowered—I can not give you the wording of it—to construct fish-ways. Mr. McDonald said to me that he secured that legislation.

Q. Are you connected with this fish-way?—A. Yes, sir.

Q. Do you know that it is a good thing?—A. I do.

Q. And you do not know whether Mr. McDonald has ever made any charge against the Government for the use of it?—A. I know that in this case, because I wrote the letter myself; he wrote a letter to the Secretary of War.

By Senator SQUIRE:

Q. Have you an idea that he intends to make a claim?—A. He can not make a claim because that letter is already filed in the War Department.

By the CHAIRMAN:

Q. Are there any other patents?—A. He has a patent filter which

is now being experimented with and remodeled and adopted in the Armory Building.

Q. You say it is adopted at the station?—A. It is being experimented with and perfected in the Armory Building.

Q. Do you know that it is being used to-day in there?—A. It is running there, and he is working with it day by day.

Q. Do you know whether the various tanks are supplied with water which has been filtered by it?—A. They are supplied principally from the Loomis filter. But he has men in the Armory Building who have taken their time, or the Government's time, making alterations and perfecting this filter.

Q. Is it in use there?—A. He has it in use. It is in use, of course. It is being tested. He is altering and perfecting it.

By Senator SQUIRE:

Q. What is the point you want to bring out?—A. The point I want to bring out here is that this is a personal patent and that he uses Government employes' time in altering and in making plans and models of this filter.

By the CHAIRMAN:

Q. Does he make them there for sale?—A. They are not perfected; they are not really to be put on the market.

By Senator SQUIRE:

Q. Do you mean to say that he is using the time of Government employes for his own benefit or for the benefit of the Government?—A. I do not see wherein it would be a benefit for the Government, if he is perfecting a patent filter which he expects to complete and put on the market for general sale. As I understood from him, a company has been formed for this purpose.

Q. You charge that he is employing men, the Government paying them, to work on plans and models for a patented invention which is his own private property?—A. I do, sir. Then, this trip to Alaska. You have got the questions all there. You will come to that on other witnesses. I like to know about the trip that was made to Alaska last year in charge of Dr. Bean.

By the CHAIRMAN:

Q. What light can you give us on that subject?—A. All the light I can give you is that Dr. Bean came into my room one day and asked the use of my telephone. He called up Fitch, Fox & Brown, real estate men, and asked them "how about those securities," and if it would be all right; that he wanted the money; that he must have it. Knowing that he had been buying property, I said to him, "Are you buying another house?" He said "No, I am not. I want to get off to Alaska and the appropriation bill has not passed, and I have got to furnish the money to make this trip;" which was sometime in July, I think.

Q. Last year?—A. Yes, sir; before the appropriation bill had passed.

Q. Do you know that he made the trip?—A. I know he did. I know that one of these reputed nephews of Colonel McDonald was on that trip.

Q. Do you know what they went for?—A. He told me that he was going to get some statistics and some photographs and some fishes.

Q. Do you know whether he accomplished that?—A. I believe he did get a few photographs.

By Senator SQUIRE:

Q. What is the impropriety charged?

By the CHAIRMAN:

Q. What bearing has this?—A. That he took this nephew of the Commissioner and gave him this trip to Alaska——

Q. Was he employed in the office?—A. And that Dr. Bean borrowed this money in advance, anticipated the appropriation, to make that trip.

Q. He advanced the money himself?—A. Yes, sir.

By Senator BLODGETT:

Q. He took his chances of getting it back?

By Senator SQUIRE:

Q. What is the impropriety of that? The man advanced the money; he went on business; it is his lookout whether he gets his pay or not.—

A. I suppose it is, but I did not know that it was customary for any man to anticipate a Government appropriation.

The CHAIRMAN. Of course he does it at his own risk. If the Government had failed to make an appropriation, and he had gone on and spent his money, he would have been out of pocket. If the appropriation was subsequently made for that investigation, and he was re-imbursed, he had simply done the Government the favor of advancing the money that he might go at the proper time.

By Senator SQUIRE:

Q. You charge that a nephew of the Commissioner went along on this trip and had his expenses paid by the Government?—A. Yes, sir.

Q. Was not this trip for the purpose of carrying out the purposes of the Fish Commission? Was it not proper business for the employés to be engaged in it?—A. It might be. But here was a trip made for a special purpose by a specialist and this nephew was a comparatively new boy. I think he is still a minor. On such trips it is generally supposed they would select experienced men for the work.

Q. You think it was favoritism?—A. I do.

By the CHAIRMAN:

Q. Your criticism is on the selection of the Commissioner of this young man. In your opinion it was a matter of favoritism in sending this young employé, who was a nephew of his, on that trip?—A. I do.

The CHAIRMAN. We understand that, I think.

TESTIMONY OF LOUIS GARTHE.

LOUIS GARTHE, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. You have seen some of these newspaper articles; you have seen the article published in the New York Press of May 25, which contains certain charges against Commissioner McDonald?—A. Yes, sir.

By Senator SQUIRE:

Q. There was one published in your paper?—A. An article appeared in the American last Monday morning.

By the CHAIRMAN:

Q. Do you know anything about these charges made there?—A. I would rather you would not ask me that question, though I believe this charge to be true.

Q. Which one?—A. The charge regarding relatives. I believe it is true.

Q. Do you know how many relatives he has appointed?—A. I do not on a moment's spur. My statement was published last Monday morning, and what was in that is all I know about it.

Q. Were those statements made from your own knowledge and investigation?—A. Those statements were given to me.

Q. And you believe they are true?—A. Yes, sir.

Q. Will you state to the committee who gave you the information?—A. I do not care to do that.

Q. You spoke of an article which you sent to your paper. Have you got it with you?—A. No; I have a file copy at my office.

Q. We have not got it here. Can you tell us the substance of it?—A. It went rather into the fact that while the Commission was appointed to do certain work it had not, in my opinion, accomplished that. The general purpose of that article was not to make any charges against Mr. McDonald any further than that the work of the Commission had not been performed.

The CHAIRMAN. That general subject we will hardly go into.

Senator BLODGETT. Not to-day.

By the CHAIRMAN:

Q. You do not know of your personal knowledge that one or two or a half dozen of the appointments made by the Commissioner were of his own family or relatives?—A. I was told so and the man who told me I implicitly believe. If I told you I had a brother you could only take my word for it.

Q. But you would know?—A. Yes, sir.

Q. If you know that Commissioner McDonald has appointed more or less of his own relatives, if you know it and of course the circumstances would admit of your knowing it, then you could say so. If you do not know it, you can say so, and that is what I understand you to say, that you have been informed?—A. I was informed. You might tell me you had a brother and I could only know it because you told me so.

By Senator SQUIRE:

Q. Some one informed you. You do not know it by observation?—A. I do not know Mr. McDonald. If I were to see him in the room I would not know him.

By Senator BLODGETT:

Q. Do you know personally any of these employés who are alleged to be relatives of Commissioner McDonald?—A. I do not recognize any of these names; we know so many people in the Departments. I know dozens of persons around the Senate and do not know their names.

By the CHAIRMAN:

Q. You do not recognize the names?—A. No, sir.

By Senator SQUIRE:

Q. In your article you did not go into the details?—A. The American has no fight against Mr. McDonald. Our State is interested, because we have the oyster industry. The Commission has not done the work we hoped it would. We have no charge against Mr. McDonald. We have a charge simply against the utter failure of the Fish Commission, of which Mr. McDonald is the head, to accomplish what we had hoped it would. That is our grievance against the Fish Commission.

TESTIMONY OF GEORGE H. APPERSON.

GEORGE H. APPERSON, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What is your full name?—A. George H. Apperson.

Q. Where is your place of residence?—A. My residence is Topeka, Kans. I am temporarily stationed here.

Q. You are connected with the press?—A. Yes, sir.

Q. With what paper?—A. The St. Louis Globe-Democrat.

Q. Was your attention called to an article published in the New York Press of May 25, which is before you there?—A. (Examining article.) I have read the article.

Q. Do you know anything about the various charges, or any of them, against the conduct of the office?—A. Nothing except what has come to me from other parties. I do not know of my own knowledge.

Q. Do you know anything about this charge that the Commissioner has appointed a long list of relatives, with the salaries, etc., given in the list before you? Do you know any of those parties?—A. I am not personally acquainted with any of them.

Q. Do you know anything about the alleged appointment of that list of relatives, other than that which you get second-handed?—A. No, sir; not of my personal knowledge, except as I perhaps have heard from sources, more or less official, in the Department that these appointments have been made, the persons whose names are given there, but as to the relation of them to the Commissioner I could not say of my own knowledge.

Q. In regard to any other of these charges which are made there, have you any knowledge that would be of advantage to us?—A. I think this one is merely about relatives in office. I do not know anything about that except what has come to me from other parties; not of my own knowledge; but I have ascertained from official sources as to the increase in the expenditure under the Commissioner, but I could not say that there is anything irregular about that.

Q. Have you investigated at all as to whether or not as a matter of fact the Commission has been extending its work; whether the number of fish stations has increased, etc. Have you any knowledge on that point?—A. Nothing from my own observation. I understand they have increased their stations and extended the work to some extent. You understand, I suppose, that my information on the subject in this matter is obtained in the same way as I get it in other matters, more or less official.

Q. If a man knows anything you go for him?—A. Yes, sir.

Q. Your name was given to us as a person who knew something about this matter, and if you are in possession of any facts which would bear upon this inquiry, as to the management of the affairs of the office, we would be glad to have you state it in your own way.—A. I think you must have been misinformed as to the extent of the information which I have. I have written some articles about it at various times within the last couple of months, based upon information which I got partly from the Departments and partly from persons who assumed to know what they were talking about, all tending to show that there had been a remarkable increase in the expenditures under Commissioner McDonald as compared with the expenditures under his predecessor.

Q. Increase in the total outlay of the Commission; did they state to you how much money had been expended on new station houses, etc?—A. No, sir; I do not think they did.

Q. And hatcheries and so on?—A. I do not think I have any details as to just what this money was used for.

Q. Only that the gross amount was increased?—A. Yes, sir; I noticed it was a remarkable increase. It would be considered a remarkable increase for any department in so short a time. Of course all the departments are extending in a manner, and expenses are increasing, but I noticed in this one particular that the proportion was much greater.

Q. The increased expenditures of the Navy Department this year will be pretty large?—A. They will be extraordinary.

Q. Because they are building new ships. If the Fish Commission have put a large station, sufficiently equipped to attend to the white-fish hatchery in Lake Erie, and if they have built in Colorado, near Denver, a hatchery which calls for \$10,000 or \$12,000, and in California other works, that would account somewhat of the increased expenses?—A. I did not understand, of course, that there had been any particular change of policy in the management of the Commission since Mr. McDonald came in.

Q. Your attention was called to the fact that the total expenditures were larger.—A. Yes, sir; my information was that the policy was about the same. A reasonable increase would be expected, of course, but I did not know that Mr. McDonald had inaugurated any special reform or extension.

By Senator SQUIRE:

Q. I would like to ask the witness whether he knows any facts of his own knowledge relating to any of these charges, or whether it is hearsay from others?—A. I stated in the beginning that my information was obtained from other parties.

Q. That point being ascertained, are you willing to give the names of any parties who gave you this information, or any of this information?—A. Well, I do not think I could, but I am certain that all the parties from whom I obtained information are witnesses before this investigation.

Q. You would not care to give their names?—A. I do not care to.

At 1 o'clock p. m., the subcommittee adjourned until to-morrow at 11 o'clock a. m.

WASHINGTON, D. C., *June 14, 1890.*

The subcommittee met at 11 o'clock a. m., pursuant to adjournment. Present: Senators Stockbridge (chairman) and Squire.

TESTIMONY OF FRANK BLAISDELL.

FRANK BLAISDELL, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. You reside in Washington?—A. Yes, sir.

Q. Are you in the employ of the Fish Commission?—A. No, sir.

Q. Were you connected with it?—A. Yes, sir.

Q. You have been in the past?—A. Yes, sir.

Q. When did you enter the service of the Commission?—A. I could not say the exact date.

Q. Give the year.—A. It was in 1888, I think.

Q. In 1888?—A. I think so. I am not positive as to just the date.

Q. Two years ago?—A. Yes, sir.

Q. In what capacity were you employed at the time of entering the service of the Commission?—A. The first service that I did for the Fish Commission was as civil engineer. Now, that question might be answered differently in this respect: that I was employed to make a survey for the fish-ways at Great Falls, Maryland. I can not say whether that was the Fish Commission or the General Government. There was an appropriation made for a fish-way at Great Falls, or rather an appropriation to complete the erection of fish-ways at Great Falls, and I was employed to make the survey.

Q. Were you employed by the Fish Commissioner?—A. I was employed by the Fish Commissioner, yes, sir; but it was an appropriation of course independent of the Fish Commission.

Q. But it was under their direction?—A. Yes, sir.

Q. You were engaged at that work?—A. Yes, sir.

Q. In what capacity did you serve the Commission after that?—A. As civil engineer of the Fish Commission.

Q. Are you now in the employ of the Commission?—A. No, sir.

Q. When did you leave the service?—A. On May 1 of this year.

Q. You have seen some newspaper articles, especially in the New York Press, criticising the Commissioner and the management of the office?—A. Not specially in the New York Press.

Q. You have seen it in various newspapers?—A. Yes, sir.

Q. Are you aware that the drift of those articles is criticising the management of this office especially in reference to favoritism in appointments and as to the general management of the office; if you have any knowledge on those points, from the fact that you are in the establishment, as to the discharge of employes to make room for friends of the Commissioner, or of the appointment to office by the Commissioner of relatives of his, either of his or his wife, please state it.—A. Yes, sir; I can state positively in regard to relatives; that is one point that I have noticed.

Q. Give us all the information you can upon that point?—A. There are two Lewises, one Robert and another C. E. Lewis; a brother and sister of the Lewises married a sister and brother of Mrs. McDonald; Francis McCormick is a nephew of Mrs. McDonald, her brother's child; these are minors.

By Senator SQUIRE:

Q. Two persons.—A. These two persons, Mr. McCormick and Robert Lewis?

Q. They are employed there?—A. Yes, sir.

Q. In what capacity?—A. Clerks, I should say.

Q. Do you know what pay they receive?—A. Fifty dollars a month Francis McCormick, and Robert Lewis \$60 a month, and C. E. Lewis \$90 a month.

Q. You say they are connected by marriage?—A. By marriage, though not blood relation.

Q. Are those all there are of the family that you know of who are associated with the Commission in any way?—A. I do not know except

from statements that I have heard from time to time of the fact of two others being. One I am positive is not.

Q. Not what?—A. Not a relative of his; Miss Bessie S. Stocks.

By the CHAIRMAN:

Q. What I want to know is if you know about any members of the family connected by marriage or otherwise, so that you can cover the whole thing. There are only three as far as you know?—A. As far as I know; yes, sir.

By Senator SQUIRE:

Q. I would like to ask you this question——

The WITNESS. Excuse me, I should say right there that these young men are boarding at Colonel McDonald's; they reside there.

Q. They are members and a part of his household now?—A. Yes, sir; they are considered a part of the family.

By the CHAIRMAN:

Q. I would like to ask you whether persons were dismissed from the service to make room for these relatives of the Commissioner?—A. I could not say that; I do not know.

Q. You do not know whether there were vacancies created for them or whether they were called in as new help?—A. No, sir.

By Senator SQUIRE:

Q. Do you know how long they have been employed?—A. Well, C. E. Lewis for some time before I went into the Commission, and Robert Lewis before I went into the Commission, that was over two years, I can say, and Mr. McCormick not as long as that. That was Mrs. McDonald's maiden name.

Q. You say the Lewises were appointed before you went into the service of the Commission?—A. C. E. and Robert.

Q. Before you went in?—A. Yes, sir.

Q. When you went into the service of the Commission, was it before or after the appointment of the present Commissioner?—A. After the appointment of the present Commissioner.

Q. It was after the appointment?—A. Subsequently, yes, sir.

By the CHAIRMAN:

Q. Quite soon afterwards; it must have been, if it was in 1888. He was confirmed in March probably.—A. Well, it was in July, I think.

Q. July previous?—A. Subsequent.

Q. Do you know how long the Lewises had been in there when you went in?—A. Well, Robert Lewis could not have been in a very long time. He was appointed after Colonel McDonald was made Commissioner.

Q. Was the other one appointed by Professor Baird?—A. I could not state as to that.

Q. How about the other one, McCormick?—A. McCormick since that time by Colonel McDonald.

Q. That would leave two appointed under McDonald's administration and the other one you are not certain about?—A. I am not certain about it.

Q. You say that there were no other persons so far as you know who are connected by relationship, family relationship, with the Commissioner now engaged or who have been engaged. Are there any others who are not engaged now, do you know, that the charges would apply to?—A. None whatever.

By Senator SQUIRE:

Q. Let me ask you why you left the service of the Commission, was it voluntarily, did you resign, or were you removed?—A. No, sir; I simply received this notice:

“ F. BLAISDELL, Esq.,

“ *U. S. Fish Commission:*

“ SIR:

“ Your services as draughtsman will not be required beyond the close of the current month, and your compensation will cease on and after May 1st, 1890.

“ Very respectfully,

“ M. McDONALD,
“ *Commissioner.*

“(Through Mr. Bailey.)”

Q. What is the date of that?—A. April 26, 1890.

Q. You regard that as a discharge?—A. That is it. There is no statement made as to why I was discharged, and I never asked.

Q. Do you know whether there was any statement in writing or not; do you know the reasons why you were discharged?—A. No statement in writing.

Q. Was there any other reason given?—A. None except that; that is all.

By the CHAIRMAN:

Q. After you completed the survey that you have spoken of at Great Falls I take it you then entered the office of the Fish Commission?—A. Yes, sir; Mr. McDonald requested me to take this position. I declined to do it at first, and he insisted upon my taking this position as civil engineer of the Fish Commission.

Q. I do not quite understand. What were the duties of the civil engineer? I understand if there were fish-ways to be constructed, that is an engineering matter. Aside from that, what are the duties of a civil engineer in connection with the Fish Commission; what did you do filling that position? What were your duties after you completed the Great Falls survey?—A. After I completed the plans of the Great Falls fish-way I was then engaged in making a survey at Craig's Brook Station, Maine, and the plans for a new hatching building and building stables, etc., for that station.

Q. Whatever was necessary in the way of actual surveys of land, did you do anything of that kind?—A. Yes, sir; I made a topographical survey of this land, and did it while the snow was on the ground. I made the survey and I made preparatory plans while I was there, and also made a report while there and estimates for the completion of this work. The report, I believe, was approved of by the superintendent of the station, and the work is being carried on now.

Q. Did you seem to have work to do at the time of your discharge?—A. Yes, sir; there was plenty of it.

Q. Was there another man assigned to your place?—A. No, sir.

Q. They never have employed a man in your place?—A. Not that I know of. I could not state positively. You asked me the question what were my duties subsequent to the erection of the fish-way at Great Falls. I presume you want me to continue on that.

Q. Please do so.—A. After this work the preparation of the plans for the Graig's Brook Station, was completed I was then sent by the

orders of the Commission to Neosho, Miss., to make a survey and plans for the new hatching station at that point. I went to Neosho on receipt of this letter and made the survey, made preliminary plans while at Neosho, returned to Washington, and completed the plans for the ponds; it was to be a pond station. I made a topographical survey showing the ground, and then made a plan of ponds, a series of ponds, and estimates for piping for that station, and then afterwards made plans of the fence and gate-ways at the station.

Q. Does that complete the work you did?—A. No, sir. Then afterwards I was instructed to make the plans of a hatchery building at Put-in Bay, Lake Erie; those plans I made; also the plant for the building, all necessary machinery, together with a specification, not only of the building—that is not correct—the specifications of the building I made as well as the plans of the plant, the machinery, etc.

Q. I simply wanted to know whether you had been continuously employed upon this class of work?—A. It will take me but a little while to run through with it in brief, because there are some points you may wish to know in relation to this Put-in Bay building that may be of interest to you to know, and by going through this outline you will perhaps then have it clearer in your mind. Afterwards I made drawings for a new steam-launch to be used at this station.

Q. The Put-in Bay Station?—A. Yes, sir, on the lake. Then I made drawings showing all the piping machinery of the Wood's Holl Station, Massachusetts, and the Gloucester Station. The central station I was at work upon; when I left the Commission it was not completed. The other work was all completed. I can say that I also—this is a question that I have seen brought up in the papers—I made a drawing of the plant to be used in the shipment of shad to Germany.

Q. Have you anything to testify to in regard to any undue administration of affairs? These words occur in the resolution: "Any undue administration of the department." Have you anything that you feel it to be your duty to state to this committee, anything irregular? You have already testified as to the relatives employed.—A. I do not want to go into any personalities or anything of that kind; I simply wish to state for the information of this committee that I considered it mal-administration, in my opinion, in regard to this proposed shipment of shad to Germany. The expenditures were created before definite arrangements had been made with the German Steam-ship line to carry this plant to Germany; it would seem that this is a criticism upon the business methods of the Commission. There was a feed and air pump purchased, there was a tank purchased, and I have understood, but I could not say—I will leave that out about other matters—and they found out after all this work had been done that they could not be permitted to take this plant over to Germany.

Q. Was the expenditure wasted, or could it be used in some other place?—A. It would be wasted.

By Senator SQUIRE:

Q. Well, was it?—A. It was a special plant for that purpose.

Q. Could not it be used here somewhere?—A. I think not.

Q. The shipment was not made?—A. No, sir.

Q. What was the expense of it, do you think?—A. Well, I should say several hundred dollars; I do not know just how much.

Q. Not a thousand?—A. Not a thousand.

Q. Could the pumps you spoke of, the air-pumps and feed-pumps, be made use of in other ways?—A. They could be used like any plant in

time. They might be of use, but I do not know when there would be any such particular feed or air pump used. It was for a special purpose.

Q. They were to take them across the ocean?—A. Yes, sir.

Q. You say they could not ship this plant?—A. No, sir; the steamship company would not permit of it.

Q. What do you mean by the plant?—A. I mean the machinery; they had to have the proper appliances. It was all proper; the plant was all right as far as the details were concerned; no doubt they exercised due diligence about that; but in a business way they should have made arrangements beforehand.

Q. Is that the only favoritism you think of in relation to undue administration; the only fact you know of, of your own knowledge?—A. Well, it would be criticism on employes, that is all; that he entrusted men who were not competent for the performance of certain duties, that is all.

Q. Well, what for example?—A. Mr. Gay in selecting a site and his connection that he had with Put-in-Bay Station; that, I think, is a material point, and I would like to speak of it. When these plans were completed of the Put-in-Bay Station and the contract was let, Mr. Bayley, Past-Assistant Engineer of the United States Navy, was put directly in charge of this work. Mr. Bayley was a very competent man; he was considerably interested in the discharge of his duties in connection with this particular work. The contract was let, and as the work progressed Mr. Gay visited the station at Put-in Bay, and there he induced the Commissioner to have a lot of rock excavation, which cost several hundred dollars, to have the building lowered, which was entirely unnecessary, not only causing a useless expenditure of money, but furthermore it affected the looks of the building.

Q. Unfavorably do you mean?—A. Unfavorably; the looks of the building.

By the CHAIRMAN.

Q. Who is Mr. Gay?—A. Mr. Gay occupies the position of inspector of stations. He has no familiarity at all with construction or engineering matters.

Q. You say this was done under his direction?—A. Yes, sir; it was at his suggestion that he made this, and he was disposed to interfere, and he wanted to make suggestions all the time, and he did from the very start.

Q. Who did this work under his suggestion?—A. The contractor; it was an increase in addition to the contract work.

Q. That is, it made an additional price beyond the original?—A. Yes, sir; without consulting Mr. Bayley, who was the engineering officer, or myself, who made the plans of the building——

Q. These changes were authorized or directed by the Commissioner?—A. Not only made, but it altered our plans for the machinery when we came to put it in. Right upon that point I want to say another thing in connection with this in regard to Mr. Gay; he was sent there to select a site for this building at this Put-in-Bay Station; my first knowledge of the plant was when he brought me a sketch of a survey made by John Brown; he was a son of the John Brown of Harper's Ferry fame. I noticed a street running in the rear of where there was to be this building put up. Now, he secured this ground, it was given to them, to the Government, for the erection of this building, and in consultation with the Commissioner and Mr. Bayley, we had determined on about the size of this building. This building was to be and is now

the largest hatchery station in the world, and I saw at once that this plot was not large enough; furthermore, that we had no outlet only from the lake front; a strip was reserved immediately back shutting off communication with this street, and I apprised the Commissioner of this fact, and then Mr. Gay had to return to Put-in-Bay and enter upon negotiations again to secure this additional strip.

By Senator SQUIRE:

Q. You mean they had to buy that?—A. They did not have to buy that. The inference to be drawn was that in time they should have to secure this outlet, and this shut them off of that.

Q. When they found they wanted it they went to work and secured it?—A. We insisted upon having it and got it afterwards. It was not a good-sized city lot.

Q. They got it for nothing?—A. Yes, sir.

Q. They did not seem to see at first that they needed it and afterwards they did; upon representations they found they needed it and got it?—A. The Commissioner, after he was informed of this, attended to getting this strip.

Q. You informed him of that?—A. Yes, sir; I should like to say——

By the CHAIRMAN:

Q. I will read you the resolution under which we are making this inquiry and you will see the scope of it.

(The Chairman read the resolution.)

A. The subject of favoritism, that would be material.

Q. Tell us what you can upon that point.—A. In my capacity as civil engineer and draughtsman I had occasion to constantly see the work done by Mr. E. I. Rogers, an employé of the Fish Commission; his work was making drawings and plans of various kinds and his compensation for the same was \$75 per month. Mr. Rogers was painstaking in his work and industrious, and I consider that his work was admirably well done.

By Senator SQUIRE:

Q. You consider so?—A. Yes, sir. Of course I can not say anything further. He made free-hand drawings of boats for illustration; his light-line drawing work was good, his lettering was good, and while Mr. Rogers was working under my direction I spoke to the Commissioner of the excellence of his work and said that in my opinion Mr. Rogers should receive a larger salary. Colonel McDonald, the Commissioner, requested me to show him some of Mr. Rogers's work, which I did; he expressed himself as surprised that Mr. Rogers was able to do such fine work. His work, I am free to say, any civil engineer, draughtsman, or artist would consider worth at least \$5 a day, and Mr. Rogers has told me that he has had repeated promises of an increase in his salary. I know of employés in the Fish Commission who get the same salary and more than Mr. Rogers gets that do not begin to give an equivalent.

Q. Are there any who get more?

The WITNESS. More than Mr. Rogers gets?

Senator SQUIRE. Yes, sir.

A. Not more for the same work, not in draughting, but in other capacities. There is one who gets more; he gets \$6 a day, and he is well worth that; that is Mr. C. E. Gorham, a very competent man.

Q. Perhaps it is not necessary to have more than one man.—A. Yes, sir. There is a great deal of work ahead.

Q. As I understand you now, the burden of your testimony is that E. I. Rogers in your opinion is worth more than he is getting?—A. Yes, sir.

By the CHAIRMAN:

Q. And does not get enough?—A. Yes, sir; and he has been discriminated against.

Q. You think he has been unfairly discriminated against?—A. Yes, sir.

Q. Do you consider him as good a man as Mr. Gorham?—A. No, sir. Mr. Gorham is an exceptionally fine man. I have had eighteen years' experience in civil engineering and draughting, and have been a member of—

The CHAIRMAN. Never mind about that.

The WITNESS. I did not know but you wanted to test my capacity to speak upon this subject.

Q. The question would arise whether they need more than one such first-class man.—A. Yes, sir, for that class of work, because it is for illustration and map work that Mr. Rogers is engaged upon, and that is fine work.

Q. Do you know of any reason why he does not get more pay; would you attribute it purely to some personal reason?—A. I think it is a purely personal reason, not but what I think the Commissioner thinks he is worth more, but I think it is some personal reason. I do not like to go into personalities in regard to this thing.

By Senator SQUIRE:

Q. Do you know of any men who are employed there who are not worth what they are getting?—A. I know Mrs. Palmer is getting \$75 a month. The nature of her work seems to be principally pasting scraps from newspaper clippings in books, and she gets \$75 a month, the same salary that Mr. Rogers is getting.

Q. She is not a relative of the Commissioner?—A. No, sir. The only relatives are those I have stated. I do not know of anything else that is in the papers. It speaks there of Fort Washington; that I do not know anything about.

TESTIMONY OF THOMAS W. KELLER.

THOMAS W. KELLER, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Where is your residence?—A. West Virginia.

Q. What place?—A. Romney.

Q. Have you been in the employ or are you now in the employ of the Fish Commission?—A. I am, sir.

Q. How long have you been in that employ?—A. I was appointed in April, 1888.

Q. Where do your duties keep you?—A. My duties at this time are here. My duties when I first went into the Commission were at Fort Washington for two months, and then I came here to the office.

Q. What position do you fill?—A. I am a clerk in the Fish Commission.

Q. A clerk in the office?—A. A clerk in the library.

Q. Were you ever employed at the Fort Washington station?—A. Yes, sir.

Q. In what capacity?—A. I was record clerk at the Fort Washington station.

Q. What do you know as to any funds being accumulated from the sale of shad and other fish at that station? State with regard to that.—

A. Well, sir, the Commission runs a seine at Fort Washington station for the collection of shad eggs, and of course the Commission catches fish and disposes of them, and they are shipped to market and the proceeds pay the expenses of the seine; when I say the expenses of the seine I do not mean to say the entire expenses.

Q. They go towards it?—A. Yes, sir; they go towards that, but there are certain salaried men on the seine who are paid by the Commission.

Q. Do you mean the entire proceeds of the sale of these fish go to pay for hauling the seine?—A. I do not say the entire; I do not mean to say it takes the entire.

Q. What becomes of the other part, which is not made use of in that way?—A. They generally dip the seine about April, from the 5th to the 10th of April.

Q. It lasts about two months?—A. It generally lasts till about May, until somewhere about the 15th of May, somewhere about there.

Q. Let me ask you this question: In your position when you were at Fort Washington did it come in your way to know what was done with the money received for the fish sold?—A. Yes.

Q. You state that a part of that money was used to pay the expenses of the fish catching.—A. The greater part of them.

Q. What became of the other part?—A. The other part I turned over to Mr. Worth, the superintendent of the station. I turned over all the money to him. All the money was turned over to Mr. S. G. Worth each day as the proceeds were returned from the market. At the end of the season all the seine-haulers were paid out of that money; out of that fund.

Q. What became of the balance?—A. The balance Mr. Worth has.

Q. My question is, what proportion of it was not paid for the expenses?—A. Well, sir, I am only giving it from recollection, understand; I have not the books in front of me.

Q. In a general way, what was the rule as to that?—A. Something over \$40 I think was left in Mr. Worth's hands. What he did with that I do not know; I am not in a place to know.

Q. That was in the summer of 1888?—A. Yes, sir.

Q. Have you any knowledge as to the operations there in 1889?—A. Yes, sir, I was there in 1889.

Q. What was the course pursued in 1889?—A. The same in 1889, except in 1889 I can not say as to the amount. I think, though, that it was something in the neighborhood of \$100 or more that he had in his hands after everything was paid. In 1889 I would not state the amount. I made no settlement in 1889 from the fact that Mr. Worth took the account, which I did not have; some of the accounts, for instance, the amount paid to seine hands, he took that away with him before I had made a settlement, and brought it to Washington, and I never had hold of that afterwards.

By Senator SQUIRE:

Q. As I understand you, the money received from the sales of these fish that were taken for the purpose of getting the eggs was received by you?—A. Yes, sir, every day.

Q. You applied a part of that money to the expenses of hauling the

seine and other matters connected with the seine?—A. I did not apply any of it myself.

Q. You turned it all over?—A. Yes, sir.

Q. Did he pay a part of this money out for hauling the seine?—A. He did so. He paid the wages of the men, the seine-haulers.

Q. And, in 1888, all but \$40?—A. I did not say all but \$40; I said in the neighborhood of \$40.

Q. Now you say that there were some men employed upon this seine work that received pay from the Government; the expense of hauling the seine, or whatever other work there was about it, was not all paid out of this money?—A. No, sir; only the seine-haulers were paid out of it, except, I think, Captain Harron, who received a salary as seine captain from the Government.

Q. Has that been the practice right along since that time?—A. I can not say as to this year. I am speaking of 1888 and 1889.

By the CHAIRMAN:

Q. You say that \$40 was turned over by you? What is the name of the gentleman you paid it to?—A. Mr. Worth. I turned over the whole each day to him; each day as the proceeds were received.

Q. And the next year, in 1889?—A. The next year, in 1889, there was something in the neighborhood of over \$100.

Q. Besides what was paid to the seine-haulers?—A. Yes, sir. I want you to remember I did not make that settlement in 1889.

Q. You say there might have been a little less or a little more?—A. Yes, sir.

Q. What do you know about Mr. Worth being drunk and intemperate?—A. Well, sir; I suppose Mr. Worth did drink some down there.

Q. To what extent did he drink—to a degree which interfered and incapacitated him for the discharge of his duties?—A. I have seen Mr. Worth under the influence of liquor.

Q. So that he was not fit to do business?—A. Never but on one occasion.

Q. Was he in the habit of drinking daily and then only occasionally getting a drink too much?—A. I could not say that he drank every day.

Q. Upon one occasion that you know of he drank too much?—A. Yes, sir.

Q. How many days did it extend over?—A. One day; that is all.

By Senator SQUIRE:

Q. Was it upon any special occasion, or did it simply happen so?—A. Well, on one occasion, one night, he brought some fish to Washington; it was in what we term the glut, and they catch great quantities of them. We have a boat there, a little tug-boat, that we use, launch No. 61, that we use for collecting the eggs from different shores. That boat was brought to Washington with these fish, and the next day when they returned I noticed Mr. Worth in a bad condition; that is, he had been drinking too much, and I said to him, "Mr. Worth, you are not going to send these men down the river to-day to Chapman's Point; they have been up all night last night, and it is too much to send them down there and stay until 1 or 2 o'clock to-night again," and he informed me it was none of my business, that was his business. I said, "All right, sir; it is your business," and he immediately went up to the house and went to bed.

Q. Did he send the men down or not?—A. Yes, sir; he did.

Q. They got back all right?—A. They got back safely, but still they had been up all night, all the night before, and the day before.

By the CHAIRMAN:

Q. Have you known any other instances when this condition of inebriety was such as to be detrimental to the public service?—A. Well, I do not know, except what I heard.

Q. You do not know it of your own knowledge?—A. Only what I have heard the men talk about. My business is in the office.

Q. Do you know whether the fact that Mr. Worth was tipsy upon that occasion was reported to Commissioner McDonald?—A. I would not say that. That is as far as I know.

Q. You do not know whether he was apprised of it?—A. No, sir.

Q. What do you know about photographs being taken there by Mr. Worth and sold by him? Do you know anything about that?—A. Well, Mr. Worth has taken some photographic views along the river, and I did know of his selling them to men belonging to the Commission there.

Q. Belonging to the Commission?—A. Yes, sir; in the employ of the Commission.

By Senator SQUIRE:

Q. Was this a mere amusement of his, or was it a part of his duties?—A. I don't think it was a part of his duty, sir.

Q. Did this photographic apparatus belong to him or to the Government?—A. To the Government.

Q. Unless he was instructed to take views with it, why was it furnished by the Government?—A. I do not know, sir.

Q. Can you state?—A. No, sir.

Q. Do you know whether it was his habit to take views and furnish them to the office; to the head office?—A. I saw a set of views at the Commission.

Q. Were they views of the stations taken with a view of showing the station and the work?—A. No, sir; not any view of the station.

Q. Simply a general view?—A. There is a general law that would not allow him to take the station because it would include the fort. They were only photographs of the fishing and the hauling of the seines, etc.

Q. They were views representing the hauling of the seine?—A. Yes, sir, at the different points.

Q. Is that what the photographic apparatus was for—taking views of the hauling of the seine?—A. I do not know what it was for.

Q. You do not know what the purpose of the Government was in having that apparatus there?—A. No, sir.

By the CHAIRMAN:

Q. Allow me to ask you if Mr. Worth, or any other person acting with his consent and approval, made a practice of furnishing and selling liquors to the men, the seine men, or any of the men employed there.—A. Not that I know of.

Q. There has been a charge of that kind made?—A. No, sir; I know nothing of that kind.

By Senator SQUIRE:

Q. Did Mr. Worth furnish any dinners at Fort Washington to visitors and make any charge for the same?—A. Yes, sir; at least I heard he did.

Q. Do you know any of the facts about it?—A. I never saw the money paid. I heard he did. I do not state that except from hearsay.

By the CHAIRMAN:

Q. How do the men who are employed there obtain their board; that is, what is the system; do you have a mess and live together, and are the supplies furnished by the Government?—A. The spawn-takers and the men at the station, except the colored men, have a mess.

Q. They are supplied by the person in charge?—A. No, sir.

Q. Do you mean to say they board themselves?—A. They board themselves.

Q. How about Mr. Worth; does he board himself?—A. Yes, sir.

Q. He has a family there?—A. Yes, sir.

Q. And if he furnished any dinners and took any pay from visitors and strangers there he furnished them at his own house, did he?—A. Yes, sir.

Q. That is, you understand they were not furnished at Government expense?—A. No, sir, not at Government expense.

By Senator SQUIRE:

Q. It is charged that Mr. Worth at times was in the habit of charging visitors, not Senators and members or employes of the Commission, for meals. You say you heard he did that, but you did not see the money taken?—A. No, sir.

Q. As to any maladministration or anything of that sort, if you are aware of any facts about that we would like to have you state them?—

A. As far as Colonel McDonald is concerned I never saw anything that he did but that was for the good of the Commission at Fort Washington.

Q. Or anything in the office?—A. No, sir; I never was at any other station.

Q. I mean in the office?—A. No, sir; or not there.

Q. Whether Mr. Worth attended to his business faithfully; whether you know of any other instance where he did not properly attend to his duties?—A. That is the only occasion that I know of that he really neglected his duties.

TESTIMONY OF TARLETON H. BEAN.

TARLETON H. BEAN, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Where is your residence?—A. My residence is in Washington.

Q. You are connected with the Fish Commission.—A. Yes, sir.

Q. How long have you been connected with it?—A. Sixteen years, nearly.

Q. In what capacity are you at present employed?—A. I am the ichthyologist of the Commission and edit the publications.

By Senator SQUIRE:

Q. Here are questions that have been submitted to the committee. We want to be open and straight about it. Have you not been apprised of Mr. Worth's habits at the Central Station on the Potomac?—A. I knew nothing about it.

Q. You know nothing about it?—A. Nothing whatever.

Q. Have you never heard of his being intemperate?—A. I have heard of his being intemperate, but not since his connection with the Fish Commission.

Q. Did you not hear of this instance, about his having sent boats down the river when the men had been up all night bringing fish to Washington?—A. No, sir; and perhaps one reason for not hearing it would be that my office has been in the Smithsonian Building until recently; until the publications were placed in my charge I kept my office in the Smithsonian Building.

Q. What state are you accredited to?—A. Pennsylvania.

Q. What are your politics?—A. I am a Republican, and have been all my life.

Q. What is your present position with the Commission?—A. Ichthyologist.

Q. Give a general outline of your duties?—A. When collections are received from any of the vessels of the Commission, certain portions of them may be sent to me for identification of the species and a report upon them. When letters are obtained from correspondents, in most cases, if they involve any technical knowledge of the fishes, the letters are referred to me for identification of the species if possible, and to prepare and give data for an answer; and of course, in reference to the publications, I have the ordinary editorial duties, to have the copies prepared and transmit proofs to the authors and receive them and to see that the corrections they indicate are made, and I have special investigations; also field work. If Congress calls upon the Commissioner to make an investigation and he needs my services, he orders me to go to some point on the coast or some other place within the range of his duties, and I go and make reports upon such trips. I have made a number of that kind to the coast of Long Island and New Jersey, and even on the west coast and to Alaska.

Q. What connection have you with the Forest and Stream Publishing Company?—A. I edit one of the departments of the Forest and Stream.

Q. What compensation do you receive from them?—A. \$1,500 a year.

Q. What other papers do you contribute to?—A. To no papers. I contribute to scientific journals, but not for pay. The Transactions of the American Fisheries Society, I have sent a paper there.

Q. To what other papers do you contribute?—A. To no other papers.

By the CHAIRMAN:

Q. Your contributions to these scientific journals, is that considered a personal matter or is it official, representing the Fish Commission?—A. Well, sir, it is pretty hard to say. Of course the work grows out of my relation to the Fish Commission.

By Senator SQUIRE:

Q. You said you furnished papers to various societies connected with the fishing interests. I ask you whether you do that in an official way?—A. No, sir; it is done with the consent of the Commissioner. His permission is always obtained for the publications of matters of that kind.

Q. I did not know but these various societies called upon the Commissioner to give them such information, and that you did it as an official matter.—A. The last one which I sent, for instance, to the Fisheries Society, was a paper read at Put-In-Bay, and had to do with the members of the salmon family and other families found in Alaska.

Q. Furnishing information to the society and to the country upon fishery matters?—A. Yes, sir.

Q. You do not receive compensation from any other paper except

Forest and Stream?—A. No other paper. It has nothing to do with my official work; it is not carried on in business hours at all.

Q. Did you take a trip to Alaska last year?—A. Yes, sir.

Q. Give the number and the names of the parties upon that trip.—A. Livingston Stone, of the United States Fish Commission at that time, the gentleman in charge of the piscicultural department of the United States Fish Commission, was a member of the party; Franklin Booth, of the University of California, went with us as surveyor, and Robert Lewis, of Washington, went with the party to take the part of rodman for the surveyor, and assisted in other duties. His time was principally occupied with the surveyor.

Q. Did he serve as rodman?—A. Yes, sir; he served as rodman for the surveyor.

Q. How long a time was he occupied with that upon his part?—A. The entire time of our visit was occupied in surveying.

Q. How long were you there?—A. From the 1st of August to about the 10th of September; a very short time, of course.

Q. During which time Mr. Lewis served as rodman for the surveyor?—A. During which time Mr. Lewis served as rodman for the surveyor, and a very arduous duty it was.

Q. He is a young man, under age?—A. I believe he is, yes, sir, under twenty-one.

By the CHAIRMAN:

Q. Did he perform the duties satisfactorily to the engineer?—A. Decidedly. His work was very highly praised by the surveyor.

Q. They were all on the pay-roll?—A. Yes, sir. Mr. Booth was put on the roll to take the place of the man who was selected here to take the place but could not go. Mr. Booth was recommended by Mr. Davidson, of the Coast Survey, and on the strength of that recommendation I asked permission to take him in place of the man who could not go. You know, it was almost impossible to get trained men in a place like Alaska, where men go only upon engagements for special purposes.

Q. You might have taken a man from Tacoma?—A. Yes, sir; we might have done that. He went for a mere nominal sum, and his services were worth, I am sure, twice what they cost.

Q. Including the expense of the transcontinental trip?—A. The round trip was only \$125.

By Senator SQUIRE:

Q. That is for fare alone?—A. Yes, sir.

Q. What pay was he getting?—A. I believe he had \$50 a month. He worked day and night. I am speaking of this man Lewis now. I have had a good deal of experience on that coast. I have been to Alaska twice, and I know I could not have replaced Mr. Lewis for \$100 a month, and besides that he did a good deal of work as a stenographer; he wrote quite a good many letters for me and saved my time.

Q. What other duties did he do besides writing letters?—A. He aided me very much in making collections.

Q. Collections of fish?—A. Yes, sir.

Q. That is, when he was not employed as rodman?—A. When he was not employed as rodman. He also assisted Mr. Stone materially in recording temperature observations and making examinations of the fish to see whether they were in fit condition for spawning. He was really a very useful all-around man.

Q. Can you give us a copy of your letter of instruction?—A. Yes,

sir. The full letter of instruction is contained in the Commissioner's report to the Senate and House.

Q. Can you furnish a copy of your report?—A. That is before the House and Senate now.

Q. When did you start upon the trip?—A. Upon the 10th of June.

Q. What was the total expense of the trip?—A. I have been trying to get that. I can not tell exactly what it is, but my impression is that outside of the salaries, the total cost of the trip was less than \$1,000; that includes 10,000 miles of travel and subsistence for two people, and nearly 5,000 for two other people. It also includes the cost of maintaining twelve men during a trip to the source of the principal salmon river in Alaska, and our subsistence during the whole time—six weeks in Alaska and San Francisco—for the time we spent there. The letter of instruction is embodied in the report to the Senate and House.

Q. What year was that?—A. It came in last week; it has not yet been printed. The investigation closed in October, 1889, and the report was handed in in January, 1890, and sent up to the Senate and House and ordered printed.

By the CHAIRMAN:

Q. Do you consider that trip as a wise measure, and were the investigations which you were sent to make important to the general interests of the Fish Commission?—A. I consider that they were very important.

Q. Were you looking particularly as to the salmon fisheries?—A. It had particular reference to the salmon fisheries of Alaska; it was an investigation conducted by order of Congress. This trip was paid for from the general appropriation in the same way in which the expenses of all other government expeditions are defrayed; the party in charge furnishes the money. It is taken up on vouchers, and the vouchers are paid if found correct as soon as presented. The census department is conducting an investigation of the same kind now, I happen to know one of the parties who has gone South. He furnishes his own money and gets it back on vouchers, and I did the same thing. Of course I borrowed this money.

Q. We do not care about that.—A. Upon security, upon my own property, and I paid 6 per cent. interest for the money.

Q. What was the date of the sundry civil bill?—A. I do not know.

Q. Give in detail the results of the trip.—A. The results of the trip were these: A report which is before Congress now, a collection which has been partly studied and made the basis of this report, and further collections which are now being studied and a report upon which is almost complete.

Q. Did you find new fish?—A. Yes, sir; but not salmon. This had particular reference to the salmon. The Commissioner took occasion to embody in his instructions reference to other fishes which might become valuable properties in the same region.

Q. That you investigated in connection with the salmon?—A. Yes, sir; particularly the river fishes, also the river plants which might afford shelter or food to the river fishes, which collections were made and the supplemental report upon them is nearly complete now and would have been complete had it not been for interruptions brought about by attacks of one kind and another upon the Commission, which, of course, have taken up a good deal of our time in one way and another. Then, besides that, besides the collections made, data was obtained for selecting the plottings or charts; particularly inland plottings are numerous, and they are embraced in the report which was made.

Q. You say the investigation was more particularly with reference to the salmon?—A. Yes, sir; Congress asked for an investigation on that subject.

Q. What rivers did you examine with reference to the salmon fisheries?—A. We examined first the Karlook River, which furnishes one-half of the Alaskan yield, 250,000 cases a year.

Q. Where does that come in?—A. It falls in on the west side of Caviak Island, and about the middle or a little nearer the north end of the island.

Q. Did you go to Chillikoot?—A. No, sir; that is on the eastern side, and then at Karlook the catch often amounts to 150,000 in a day.

Q. What other streams did you go to?—A. We went next to the streams which flow into Uyak River.

Q. Are these salmon valuable in quality?—A. The red salmon from the river are worth on an average \$5 a case. The catch of that river alone is worth about \$1,250,000.

By Senator SQUIRE:

Q. How do they compare with the Columbia salmon?—A. The same species is found there; it is not the same salmon. The large salmon of the Columbia River is found in the Karlook, but not in large numbers; it does not go into the small rivers as a rule; it goes into great rivers. And then we found up in Uyak Bay valuable commercial fish. That is, the canning specials are not found there, we get only the hump-backed salmon which is used for salting. It is valuable for salting, but not for canning, and yet it is the most abundant salmon in the Territory.

Q. Your intention was to secure information for the use of the bureau in regard to the quality and character of the fish and the supply of them. Did you have in connection with that any other scheme or plan with reference to hatcheries?—A. Yes, sir; Mr. Stone went along for the express purpose of looking over the ground to see what facilities for hatching salmon might be found there, and what would be the expense of the establishment, and what would be the probable success of such undertaking, and whether any necessity exists for that work. All of those matters were reported upon and are now embraced in the report to Congress.

Q. How soon will that report be printed?—A. It is in the hands of Congress now, and it has been ordered printed. We went to the south end of the island—the Alitak Bay region—and visited the canneries in operation there, and the streams from which they got their supply, and we found a catch of perhaps 40,000 cases of red salmon in that bay. The streams are all small. We found that had been the catch the last season—about 40,000 cases. The season closed just about the time we arrived there, and of course we saw the fish there, and then, besides that, two of the party made a trip to the Afognak Island, which is the seat of two large canneries, and where the catch this year was brought principally from the Karlook, and they sent their steamers over to Karlook and carried the fish to the canneries on the Afognak until the run of silver salmon began, when they quit the fishery at Karlook and carried on the fishery near the canneries on the Afognak Island. The introduction of steamers into that fishery has revolutionized the salmon business.

By the CHAIRMAN:

Q. Let me read you this resolution and see if you can give us any information upon this subject.

The Chairman read the resolution.

Q. I would say in a general way it has been charged that the present Commissioner has appointed a large number of his relatives, of his family, of his own or his wife's, and that they and some others are favored as against others. Will you state generally whether you have any knowledge upon those points.—A. I was not aware of it. I do know that some of the Commissioner's connections are employed in the Fish Commission.

Q. Can you give their names?—A. Mr. Lewis is one, I believe, but I do not know whether both of them are now employed by the Commission. Robert Lewis I know is a connection of the Commissioner.

Q. And was appointed by him?—A. Yes, sir.

Q. The other Mr. Lewis has he been in the service longer?—A. My impression is that he was appointed by Professor Baird; I am quite sure he was. He has been in the service fully five or six years. A great many of these relatives or connections of the Commissioner were employed by Professor Baird; I mean a large percentage of those who are in the Commission. I really do not know how many. I do not believe that there is any large number.

Q. How many should you say there are at a guess?—A. Well I should think four or five altogether. That is my impression, although I do not know positively. I believe all of them are receiving very small salaries. There have been, as far as I know, very few changes in the Commission except changes by resignation, persons who have gone out to go into some other line of work.

Q. Does your observation there lead you to think that the Commissioner exercises favoritism and partiality toward some employés at the expense of others?—A. No, sir; I never have discovered anything of that kind.

Q. It has been charged that the employés come and go about as they please; that they are not held to hours; that they would be allowed to leave at 3 o'clock, say, and that they come in late, and that they take an hour or so at noon, and that there are no well-enforced rules as to hours of service among the general employés there. What can you say as to that?—A. Well, I do not know anything about that, except with reference to some of those who hold responsible positions. There are a number of the people in the Commission who spend their nights at work in the service without any additional compensation, and my impression is that they are not required to be in their office promptly at 9 o'clock, but that they make up more than the number of hours required in the service.

Q. What is the necessity for this night-work that you speak of?—A. Well, a great deal of confusion has been brought on or has entered into some of the departments of the work through incompetency of the employés. I do not know personally about that, but that is the statement made, and the extra work is necessary in order to get the affairs in a proper shape.

Q. Allow me to ask you this: Are these incompetent employés there now; are they continued in the service?—A. That I do not know about; I think not. Perhaps I ought not to say incompetent persons; they are persons who have done the best they could, but probably were not equal to the task, not willful neglect, because some of those very people might have spent extra hours trying to straighten up matters.

Q. It has been charged here that Commissioner McDonald has invented a filter, which he has had patented, and that he has employed mechanics who are employés of the department in building and perfecting that improvement, which is a private patented affair of his own. Have you any knowledge in regard to that?—A. Nothing except

hearsay. I know that the Commissioner is trying to devise a filter, but what relation it has to his official duties I do not know.

Q. Do you know whether or not one of those filters is in use there now?—A. Yes, sir; I was about to say that the Commissioner now uses for the obtaining of a supply of good water for drinking purposes and also for the hatching purposes and the aquarium purposes; he has now in use one of his own filters, just as a number of other inventions which he has patented are in use by the Government without costing the Government anything.

Q. What are those?—A. His hatching jars, which he invented. I am not sure that he has patented it, but he invented it, at least, for hatching the eggs.

Q. You consider that a valuable invention?—A. Yes, sir; in fact until these jars were invented it was impossible to hatch cod or any other floating eggs.

By Senator SQUIRE:

Q. What is there to prevent his making a claim which would be allowed by the Government for the use of the patent?—A. I believe that he has given the Government the right to use it.

Q. Deeded it to the Government?—A. Yes, sir.

By the CHAIRMAN:

Q. Are you familiar with the fishway which was invented by Mr. McDonald?—A. I have seen models of it.

Q. Do you know whether he has received anything from the Government for the use of that fishway?—A. I do not understand that he has any connection with the fishway company at all.

By Senator SQUIRE:

Q. Do you know whether he does or does not receive anything from the Government for the use of it?—A. I do not know, but I have understood that he does not.

Q. You have understood so?—A. That he does not receive anything for any of his inventions.

By the CHAIRMAN:

Q. The jar, what is known as the McDonald jar, is that an important invention?—A. It is one of the most important inventions that has entered into fish-culture operation.

Q. That is in use now?—A. It is in use all over the United States, and also in many other countries, and recognized everywhere as the most valuable jar for hatching eggs, which will partly float in water, but which need to have an underneath current to float them up.

The CHAIRMAN. To keep them alive.

TESTIMONY OF RICHARD DANA.

RICHARD DANA, being duly sworn and examined, testified as follows:

By Senator SQUIRE:

Q. What is your name?—A. Richard Dana.

Q. Where do you live?—A. I am on duty in Washington.

Q. Are you connected with the Fish Commission?—A. Yes, sir.

Q. In what capacity?—A. I am an expert fish culturist. They move me around from one station to another wherever they need my services.

Q. Where are you now engaged?—A. In Washington, on shad work.

Q. At the Central Station?—A. Yes, sir.

Q. I will read you the resolution under which we are operating.

(Senator Squire read the resolution.)

Q. Do you know any facts on the questions raised in this resolution?—A. None whatever.

Q. Do you know anything in regard to the conduct of the office down here at the Central Station?—A. No, sir; I have only been on duty here since the 15th of April; I have nothing to do with the administration of it. I only look out for the eggs and the young fries.

Q. Do you know anything about the state of the fishes?—A. No, sir.

Q. You have heard the resolution read. Do you know of any favoritism?—A. No, sir; none whatever, except what I have heard through newspaper reports and what is talked around in the office.

Q. Is there any information you can give the committee in relation to this inquiry that would enlighten us?—A. No, sir; except in my own line. There is nothing carried on that was not carried on under the late Professor Baird; just the same men employed.

Q. You do not know of your own knowledge?—A. I do not know of my own knowledge. There are four of us who are rated as fish culturists, who were appointed in 1885 under Professor Baird, and they are still in.

By the CHAIRMAN:

Q. You were appointed by Professor Baird?—A. Yes, sir.

By Senator SQUIRE:

Q. What is your salary?—A. Seventy-five dollars per month.

Q. What are your duties?—A. I have charge of eggs. Eggs are taken at Fort Washington and developed at the Central Station, and I look after them, and as the fries are hatched out they are delivered to a messenger to be sent out and distributed.

Q. Do you get your instructions from the Commissioner's office as to the distribution of eggs?—A. Yes, sir.

Q. What system do you have? Something has been said about tickets. I do not understand it myself. Please explain the *modus operandi*. What instructions do you receive?—A. I have nothing to do with that; that is under the superintendent of Fort Washington, where the eggs are taken. He delivers the tickets to the spawn-takers, and that is all done by the superintendent of the Fort Washington Station, Mr. Worth. He has all disbursements.

Q. You simply distribute the eggs?—A. Yes, sir; in the form of fries, after they have hatched out.

By the CHAIRMAN:

Q. It has been stated here by some witnesses that the general discipline of the office was very lax; that the employés all through the tations practically came and went with a good deal of personal liberty.

By Senator SQUIRE:

Q. You are not stationed there?—A. Yes, sir; I am on the lower floor of the building.

By the CHAIRMAN:

Q. What is your observation as to that?—A. So far as my own work is concerned, I can say that we work over hours. We have to work

Sundays and every other day. I go on duty at 7 and go off at 6, and if anything arises during the night I have to be called up by telephone. These eggs are hatched out at all hours of the day and night, and we have to be there to watch them.

By Senator SQUIRE:

Q. Why do they have to be watched? A. Because they come out of these jars and they go into an aquarium, and if they are too much crowded they commence to die. We put them up in these transportation cans and call for a messenger, and send them out and keep them going out as fast as they are hatched out.

TESTIMONY OF STEPHEN G. WORTH.

STEPHEN G. WORTH, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What is your full name? A. Stephen G. Worth.

By Senator SQUIRE:

Q. What State are you from?—A. North Carolina.

Q. What was the date of your first appointment?

The WITNESS. In the Fish Commission?

Senator SQUIRE. Yes, sir.

A. I think it was the year 1878.

Q. How long were you in office?—A. During my first appointment about five or six weeks.

Q. How long were you employed as superintendent of fisheries of North Carolina?—A. From about 1878 until 1884.

Q. What was the date of your last appointment in the United States Commission?—A. In April, 1887.

Q. Who appointed you?—A. Professor Baird.

Q. What was your salary, Blue Book of 1887?—A. It was \$60 a month and my traveling expenses, including my board.

Q. What is your present salary?—A. \$1,800 per year.

Q. Does that include anything else?—A. Nothing else.

Q. No perquisites or board?—A. No, sir.

Q. Were you in charge of the Fort Washington station in 1888?—A. Yes, sir.

Q. Who was your clerk?—A. Thomas W. Keller.

Q. Have you a copy of your seine account for that season?—A. I have.

Q. In what capacity were you employed in 1889?—A. I was still superintendent of the Fort Washington Station.

Q. Did you have charge of the seine account?—A. Yes, sir.

Q. Who was your clerk?—A. Thomas W. Keller.

Q. Have you a copy of the seine account for this year?—A. Yes, sir.

Q. Were you in charge of that station in 1890?—A. Yes, sir.

Q. Who was in charge of the seine account that year?—A. I was.

Q. During the time that you were in charge of said station was there any surplus fund at the close of the season?—A. Yes, sir.

Q. How much?—A. During the three seasons of 1888, 1889, and 1890 there was a surplus of \$41.27, I think it was.

Q. Let me inquire into that more carefully. That was for all three seasons?—A. Yes, sir; all three years.

Q. The total amount?—A. Yes, sir; forty-one dollars and some cents.

Q. We have been led to suppose, or rather we have heard testimony, that it was as much as \$40 in one single year?—A. It was. It was \$44 in 1888. In 1889 it was \$24, I think, and this year, over disbursements, amounting, I think, to sufficient, at any rate, to reduce the sum total of cash left over to \$41.

Q. It was forty-four one year and twenty-four another?—A. Yes, sir; and this year I have overpaid about \$29 over and above the receipts.

Q. You have overpaid \$29?—A. Yes, sir; I have.

Q. How recently?—A. The close of the season.

By the CHAIRMAN:

Q. When you speak of overpaid, you mean that you paid out more money than you received from fish sold?—A. I mean to say that when I found that the season did not afford sufficient earnings to pay the expense of the seine, that I called on the disbursing agent of the Fish Commission to meet the deficiency, and asked him for \$112. After disbursing the \$112 I found I had still overpaid something like \$10 or \$12; that I did not ask for quite enough from the disbursing officer. Then I have charged to the seine account this year a bill of \$19.75, which is properly chargeable to the Commission, for meals furnished to the crews of the launch, the machinists, and others, who have been down there frequently and eating at the mess. I was caterer of the mess, and these meals were all charged up, and at the end of the season I charged these meals against the seine fund, which makes a deficiency really this year.

Q. Where did the money come from for these meals?—A. Out of my private pocket and the pockets of the men.

By Senator SQUIRE:

Q. As I understand you, then, you carry this surplus from one year to another as a credit, and you carried over in that way the surplus of 1888 and of the year 1889, for which you have given specific amounts, and during the present year there has been a deficit; there has not been enough money received from the sale of fish to pay the expenses of hauling seines, and that deficiency this year has been charged up against the surplus of these other years?—A. I still have a surplus of \$41. It may be that I will have a few more dollars in my hands to the credit of the seine, because there has been some fish sold this year for which I have not yet collected.

Q. Can you account for this difference this year over the others or against the others; the reason for that deficiency rather than a surplus?—A. Yes, sir.

Q. How?—A. The difference is this, sir; that while we catch, ordinarily, from seven to ten thousand fish, this year we caught only about six thousand shad. We did not make a sufficient catch to pay the expenses.

Q. Now, what disposition do you make of this surplus fund; what has been your habit in regard to this surplus fund?—A. I have reported it to the Commissioner and he has known that I have that surplus, and I have been ready to deposit it or do any thing with it that he might say. But it is a fund which can not properly be turned into the Treasury, as I have been told.

Q. You have reported it to him each year?—A. Yes, sir.

Q. Have you been in the habit any year of paying for any liquors or

wine, or any other luxuries, cigars, etc., out of this surplus?—A. In no respect whatever.

Q. You never have done that?—A. Never have done that.

Q. You have never taken a dollar of that money?—A. No, sir.

Q. In 1888, 1889, or 1890?—A. No, sir.

Q. Do you know how this impression got out that this fund was being used for buying luxuries?—A. I think I do.

Q. How then?—A. It got out through Mr. Keller, my record clerk. Late last summer I learned that he had told employés of the Central Station that I had used the public funds for my own purposes.

Q. Is he still in your employ?—A. He is not in my employ. He is in the Commission.

Q. Have you had any difficulty with him?—A. No, sir. I have had no difficulty with him. Of course I have had my own feelings in regard to the matter.

By the CHAIRMAN:

Q. Was he transferred from that station at your request?—A. I think he was, sir, in the first instance.

By Senator SQUIRE:

Q. You have these \$41 on hand now?—A. I am able to produce the \$41.

Q. That is all the money there is as the result of this business?—A. The entire credit, and I have vouchers to show the disbursements of the fund.

Q. Of the fund?—A. Yes, sir.

Q. In what form; receipts taken from seine-haulers?—A. Receipts taken, and in almost every instance witnessed.

Q. Can you state in round numbers how much you pay the seine-haulers each year?—A. I have a statement prepared over at the Fish Commission building showing exactly.

By the CHAIRMAN:

Q. Will you furnish that?—A. I will, sir. I have a statement of it, and then I have all the original papers, receipts for money, etc., and all the invoices or returns from dealers who have sold fish for us.

By Senator SQUIRE:

Q. Who has charge of the Government reservation at Fort Washington?—A. Sergeant Joyce.

Q. Do you know of any intoxicating liquors being used there?

The WITNESS. Do I know of any?

Senator SQUIRE. Yes, sir.

A. They are not allowed to be sold there.

Q. The question is "used?"—A. Yes, sir; I have used whisky there myself in my family.

Q. Have you known it to be used by others than yourself?—A. I have heard Mr. Keller say that he took a drink every morning.

Q. Have you ever seen or heard of any employé being under the influence of liquor at that station?—A. I have had two reports of that sort concerning the same man.

Q. Who was he?—A. His name was Lynch, a machinist, who was employed as an engineer on the steam-launch.

Q. Is he there yet?—A. No, sir.

Q. Did you report his irregularity?—A. I made no official report, but I reprimanded him.

Q. Were you expected to make reports of irregularities of that kind to the Commission?—A. If it had amounted to anything serious, so as to derange the work, I would have done so.

Q. That is the only case?—A. Yes, sir.

Q. Twice?—A. Yes, sir; I understand twice. In one instance I investigated and found it was stoutly denied by the coxswain of the launch, who was a strictly temperate man.

Q. Do you know of any meals being furnished to any outside parties at that station?—A. Yes, sir.

Q. Who furnished them?—A. I furnished them.

Q. Who furnished the supplies?—A. I did myself, and the Commission. Commissioner McDonald also furnished meals there. Mr. Keller, the record clerk, had company there, and he furnished them out of his own mess.

Q. Were the things prepared by persons paid by the Government or by private servants?—A. They had been prepared exclusively by servants privately employed until this season; there has been a slight exception. I had difficulty this season in procuring a servant for my own family, and I had the Fish Commission cook prepare the meals for my family, and I shared in the mess with the men, paying my pro rata for myself and family. I paid for three and a half persons in the mess.

Q. For the materials used?—A. For the materials used.

Q. You could not make any arrangement to pay anything for servant's hire of course; could you?—A. I paid the servant myself \$10 out of my own pocket.

Q. Extra?—A. Yes, sir.

Q. Beyond the amount allowed by the Government?—A. Yes, sir. And it was customary before I went on the shore for the mess cook to cook for all the employés—the record clerk and the persons in charge. This year when Colonel McDonald has taken parties there he has carried his own servants, I believe, in almost every instance.

Q. Was any pay taken for these meals furnished to private parties at that station?—A. No, sir.

By the CHAIRMAN:

Q. I thought you stated a moment ago that pay had been taken for meals that were furnished to outside visitors?—A. No, sir.

By Senator SQUIRE:

Q. Was a photographic outfit used at this station?—A. Yes, sir.

Q. To whom did it belong?—A. To the Government.

Q. Were copies of pictures taken ever sold?—A. I think one single picture was sold.

Q. By whom?—A. By myself.

Q. Was that the only instance of that kind?—A. Yes, sir; only that instance. I beg to correct myself. I furnished Sergeant Joyce one or two pictures for himself. Not exceeding a half a dozen prints, all told, have been sold there. For one of these prints I received—owing to a lack of change I sent and got the money through the mails; a man sent a dollar and I charged him 75 cents. Those furnished Joyce I think I gave to him at 25 cents each, which is about actual cost.

Q. Then there has not been much received from the sale of photographs?—A. Not exceeding \$1.75 or \$2.

Q. How much?—A. Not over \$2.

Q. Altogether?—A. Yes, sir. I furnished the plates myself.

Q. You furnished the plates?—A. Yes, sir; and paid for having them—

Q. You received the money for the pictures?—A. Yes, sir.

Q. And you furnished the plates?—A. Yes, sir; and paid for having the prints printed by professionals in the city.

By the CHAIRMAN:

Q. You used the Government instrument?—A. Yes, sir; merely to take the pictures; to make a few pictures of my family, Sergeant Joyce, and Mr. Keller and his wife and child.

By Senator SQUIRE:

Q. What is the purpose of this photographic outfit there on behalf of the Government, that is, what official use had been made of it?—A. It is to illustrate the methods of the Government Fish Commission station, and to illustrate the modes of fishing on the Potomac River as conducted by the fishermen. Views of that sort are in the collection of the Fish Commission and the National Museum. This year I have made two dozen views of similar subjects.

Q. As I understand you there have been only \$2 received by you from the sale of photographs?—A. Yes, sir.

Q. A few pictures. You furnished the plates?—A. I furnished the plates and paid for the printing in this city. They cost me then 25 cents each print to print.

Q. Were fish ever sold to men employed?—A. I believe I did furnish Keller a few pictures. I will say that I have not received over \$5.

Q. You desire to correct your testimony and say \$5?—A. Yes, I remember I furnished him some.

Q. Were fish ever sold to men employed?—A. Yes, sir.

Q. Any quantity?—A. No, sir. To some of the seine crew. They are employés, of course. I think the largest amount I ever sold to one was \$12.

By the CHAIRMAN:

Q. Did you treat that money the same as you did the money received from fish sent to market?—A. I did, sir. It is in the account, each item.

By Senator SQUIRE:

Q. Did you ever give your personal note to L. G. Haron for services rendered at the station?—A. I gave him last year a due-bill, not a note, for some \$20 or \$30. I gave him a due-bill for \$20 or \$30.

Q. For services rendered at the station?—A. It was outstanding about ten or twelve days. When I left there, for some unaccountable reason, I was way behind. I took \$100 of my own money to pay up. Whether I lost the money, or whether it was stolen, I do not know.

By the CHAIRMAN:

Q. You gave him this due-bill in settlement for services?—A. Yes, sir.

Q. Did you give him the due-bill because you were not in funds from the sale of fish, or other sources, to pay him?—A. That is it.

Q. And when you were in funds you took up the due-bill and charged it as though you had paid him at the time?—A. No, sir; the date is given there when I took up the due-bill.

By Senator SQUIRES.

Q. You have paid him?—A. Yes, sir. You understand, Mr. Chairman, that I disburse money for the Commission for small items, wash

bills, and things of that kind, and often I am outstanding \$50 or \$60, which it takes me some time to collect after the season is over.

Q. Did you not transfer the name of Benjamin Montgomery to the spawn-taking rolls, still retaining him as a handler of fish?—A. Well, he has been on that roll—on the Fish Commission roll. He has been there handling fish two years now and in training as an apprentice spawn-taker, and has become a professional spawn-taker, so that next year, if we live, he will be rated as a spawn-taker at \$55 instead of \$45.

Q. Did you transfer his name?—A. I do not remember; but I should not doubt that I did.

Q. Would you answer that “yes”?—A. I do not remember; but he was on the spawn-taker’s roll last year.

Q. Was he still retained as a handler of fish?—A. Yes, sir.

Q. Did he get pay in two capacities?—A. No, sir.

Q. In which one did he get pay?—A. As a spawn-taker, on the pay-rolls.

Q. And not as a handler of fish?—A. No, sir.

By the CHAIRMAN:

Q. Is the pay of a spawn-taker more than the pay of a handler?—A. I put him on as a fish-handler at the regular rate when we put on young men. He assisted in spawn-taking every day during the season.

Q. That gave him more pay than he otherwise would have had?—A. No, sir.

Q. Is there any difference in the pay of a spawn-taker and that of a handler?—A. Well, I never give a man less than \$45 a month who is learning to take spawn, and I consider him as in training in that capacity to become a spawn-taker.

Q. He did not draw double pay?—A. No, sir.

By Senator SQUIRE:

Q. Was a voucher made by the Government for his salary?—A. Yes, sir; he was paid out of the appropriation.

Q. Was not his salary really paid from the seine account?—A. It was not, sir. I do not think he was paid out of the seine account; but I have complete statements to show.

By the CHAIRMAN:

Q. If he was paid out of the seine account he was not paid on a Government voucher?—A. That is it.

By Senator SQUIRE:

Q. Have you ever used the Government team for the transportation of your personal property, household goods?—A. Yes, sir; paying the driver always for his work.

Q. Was the launch *Blue Wing* ever used for private expeditions?—A. It has never been used for private expeditions where I had anything to do with it.

Q. “It has never been used for private expeditions where I had anything to do with it?”—A. Yes, sir.

Q. While at Fort Washington did you have any sheets and pillow-cases made?—A. I think I had no new sheets or pillow-cases made, but I had some single sheets sewed together to make double sheets, to make them wider.

Q. What was the cost of making?—A. No cost at all.

Q. What was the name of the maker?—A. My wife did the work, and no charge was made; no compensation given.

Q. Were you ever under the influence of liquor while on duty at Fort Washington?—A. Well, I have heard it charged that I was.

Q. You were not conscious of it at the time?—A. No, sir. There was one occasion when I think perhaps I might have been misjudged by my critics. I had come to Washington, being out all night long on the steam-launch, conveying to market thousands of herring. We were unable to get our boat to take them up.

Q. When was that?—A. That was last year, sir.

Q. What month?—A. I think it was April; I am not sure I could tell.

Q. You came back to Fort Washington after this trip?—A. I was up the entire night coming here and transacted a half-day's business. A heavy rain-storm came up and I bought a rain coat, so that I can tell the date. I got back home exhausted and wet, and I went ashore, found everything was all right, walked up the hill; my family had gone that day on some little trip, and I laid down and went to sleep, as any man would have done. I was not unfitted for business; I was clear-headed. That is the only occasion when I think I could have been accused of being under the influence of liquor at that station.

Q. Do you remember ordering the men to go down the river that day.—A. Yes, sir.

Q. Do you think that was the proper thing to do, knowing that they had been exposed all night and been up since the previous night?—A. I have seen such things done in the Commission very often. I often had that to do. I have worked two nights and days on the Commission.

Q. Was it not a dangerous thing?—A. Not when they were willing to go. There was no objection made.

By the CHAIRMAN:

Q. What did these men go down the river for?—A. They went on the regular business.

Q. What was that?—A. Collecting eggs.

Q. It was important that they should go and secure the eggs?—A. It was.

Q. So that you sent them, although they had been up all night.—A. Yes, sir; those seine proprietors furnished us eggs every day, and if we did not take them away from them it created a great deal of feeling on their part, and for that reason it was necessary for those men to undergo a little additional hardship.

Q. Did you allow them any extra pay—any extra compensation?—A. No, sir.

By Senator SQUIRE:

Q. What is your politics?—A. I am a Democrat.

Q. Were you ever instructed by the Commissioner to prepare the necessary plant for the shipment of shad to Germany?—A. I was.

Q. Have you a copy of the letter of instructions?—A. Not with me.

Q. Was there not a combined feed and air pump purchased, besides a quantity of material, costing several hundred dollars, preparatory to this shipment?—A. Yes, sir.

Q. State how much labor and material were furnished for this work, and about the cost of the same?—A. Not exceeding \$250. I did not purchase the pump, so I do not remember exactly what it cost.

Q. Were any steps taken to procure transportation for yourself, party, and outfit, on the German steamer?

The WITNESS. Transportation for myself and outfit?

Senator SQUIRE. Yes, sir.

A. Yes, sir.

Q. Were arrangements made with a German line of steamers permitting you to place this plant aboard their steamer and make necessary water connections, etc.?—A. The Commissioner sent Mr. W. B. Bailey to New York City to see the agents of this line to make the arrangements for this foreign shipment, and he saw the agents in New York.

Q. Did they ever consent to your taking this outfit and shipment of shad?—A. The matter was referred to the German office of the company, and our trip was refused.

Q. They refused to take the shipment?—A. Yes, sir.

Q. Was this before or after you had purchased and prepared the plant?

The WITNESS. When we got their final answer?

Senator SQUIRE. Yes.

A. That was after we had purchased the plant. There is a particular time of the year when we have to make shipments. If we do not make it early in the shad season we can not make it, practically.

Q. Why did they not take it?—A. I did not see the correspondence. We had a day fixed—the 30th of May—and we worked hard to get ready by that day.

By the CHAIRMAN:

Q. You went to work and got up this plant before the Department was sure that the steamer would take it?—A. Yes, sir.

Q. And the steamer refused to take it?—A. Yes, sir.

By Senator SQUIRE:

Q. You spoke about the fact that other men had been in the habit of using liquor, ardent spirits. You mentioned several names; Clerk Keller was one, and there was some other man, I have forgotten now who.—A. Sergeant Joyce.

Q. I would like to know whether this practice of drinking prevails there generally?—A. Not at all.

Q. Whether men take liquor there?—A. Not at all.

Q. Is it considered a necessary concomitant of fishing?—A. No, sir; it is used in the family in a strictly medicinal manner, not for treating persons who come there at all.

By the CHAIRMAN:

Q. Does the Government furnish the whisky?—A. No, sir.

By Senator SQUIRE:

Q. Is the whisky paid for out of the proceeds of the fish sold?—A. No, sir.

By the CHAIRMAN:

Q. It is purely a personal matter?—A. Yes, sir.

By Senator SQUIRE:

Q. Have any of these entertainments ever been paid for out of the proceeds of the fish sold?—A. No, sir.

Q. Whether given to members of Congress or anybody else?—A. Not at all.

Q. It is all personal and private?—A. Yes, sir; borne by Colonel McDonald and myself.

Q. These men you speak of, have you ever known of their being incapacitated for service by reason of indulgence in drink?—A. No, sir.

Now, as regards the trip that I mentioned to you awhile ago, I was informed that when I sent the launch down the river the engineer fell asleep sitting up. He just nodded in his seat.

Q. Was that from the use of liquor?—A. No, sir; from the loss of an entire night's sleep and doing double duty.

Q. Do you know whether he drank any at all?—A. I know he drank some.

Q. During that trip?—A. Yes, sir.

Q. Was it the custom to drink considerably when they were out at nights?—A. No, sir; that was the exception. We had been out to Washington on this extra trip at night.

Q. Have you ever taken other extra trips?—A. Yes, sir.

Q. Do you customarily use whisky on those trips?—A. Never except on that trip, and I furnished that myself. I bought a pint bottle of whisky when I left the city and told them; we were all wet and it had been raining, and a man was aboard by the name of Harris, Lynch, the engineer, and myself.

By the CHAIRMAN:

Q. A pint?—A. A pint or a half pint.

By Senator SQUIRE:

Q. Then the only question that arises there is, that if there had been any accident might you not have been blamed; might not the Commission have been blamed for allowing the use of whisky even under those circumstances?—A. I think not. We did not use it immoderately at all. It was only when wet and soaked with rain.

Q. What did you do when you returned from Washington?—A. I remained there at my post. I was not in the habit of going down the river, except occasionally to overlook the ground. Those men went on their regular trip.

Q. You had no occasion to remain on duty during the day?—A. No sir; none at all. My work is all classified and done methodically.

Q. Do you not think it is for the interest of the Government that liquor should not be used?—A. Yes, sir; I have discouraged it, and there has been greater sobriety on that hill since I have been there, I suppose, than was ever known before. I can bring in credible witnesses to demonstrate that whisky is not used there as a beverage at all.

Q. These men, especially this clerk that you speak of, said they took it every day.—A. That is his own business. I have heard him say that.

By the CHAIRMAN:

Q. Did you or any of your family ever take pay or dinners from any one other than Government employés?—A. If so, it was a solitary case where some wayfarer had gotten left there. I think, though, that as a rule that whenever that has happened we have furnished them their meals. I have allowed, perhaps, in all my running of the business there, a dozen visitors meals there, all told, in three years, and more than half of that number was in the mess of the Fish Commission, and what little was collected for it was credited up to the mess account.

Q. So that whatever amount was received for meals was credited to the mess account?—A. Yes, sir.

Q. Did you ever promise to give Mr. Keller \$50 of the seine money in 1889?—A. I did, sir. I offered to recommend it and if the Commissioner approved it to turn it over to him.

Q. Was it paid to him?—A. No, sir.

Q. The Commissioner did not approve it.—A. Mr. Keller would not allow me to ask for it. He wanted his salary raised and he said he would not have \$50. He scorned the idea, and I tried twice to get him to do it, because I told him \$50 would give him \$25 in May and June.

Q. You thought he was entitled to it?—A. I told him that if the Commissioner was willing I was, and when the 1st of July came if he was raised in salary——

Q. But he declined to receive it?—A. Yes, sir.

Q. Did you ever make a requisition for any repairs to the building at Fort Washington?—A. Yes, sir; I think so. I put repairs on the building.

Q. You think you made a requisition?—A. I think so.

Q. Did you have any seine money in your hands at that time? At the time you made the requisition for repairs did you have any seine money on hand, is the question?—A. I have had seine money in my hands ever since 1888.

Q. Most of the time?—A. Yes, sir.

Q. Ought you not have to paid for these repairs out of the seine money?—A. I have paid for repairs on the Fish Commission building out of the seine fund.

Q. And rendered a statement?—A. Yes, sir: this is the seine account. I should like to make a statement. Whenever this seine business has made more than it took to pay its expenses it has been the precedent before and since I have been there to give the seine captain a dollar a day extra for the season. It has also been customary to give one of the crew who handled the fish an extra \$10. It has also been customary to give the record clerk \$10, and when I reported this balance to the Commissioner, and if he did not order me to turn it over, I did not feel that I was called upon to turn it over.

By Senator SQUIRE:

Q. Did he ever tell you to appropriate any portion of it to yourself?—A. No, sir.

By the CHAIRMAN:

Q. So you hold yourself responsible for the balance?—A. Yes, sir.

By Senator SQUIRE:

Q. Did you pay this captain and the others who have been receiving heretofore these extra sums at the close of the seasons of work the extra amounts you have specified or any other person of that sort this year?—A. They have not been paid. There was not enough. But if I am ordered to do it I will pay over the \$41. But it is not considered that we are obliged to pay it, as there is no obligation.

At 2 o'clock and 15 minutes p. m. the committee adjourned until Tuesday, June 17, at 10 o'clock a. m.

WASHINGTON, D. C., *June 17, 1890.*

The subcommittee met at 10 o'clock a. m. pursuant to adjournment. Present, Senators Stockbridge (chairman) and Blodgett.

TESTIMONY OF SETH MITCHELL ACKLEY.

SETH MITCHELL ACKLEY, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What is your full name?—A. Seth Mitchell Ackley.

Q. Your residence is in Washington?—A. Yes, sir.

Q. Are you connected with the Fish Commission Service in any way?—A. No, sir. I am on duty in the Coast Survey, another branch of the service.

The chairman read the resolution authorizing the investigation.

The CHAIRMAN. Now, the committee has no knowledge as to the particular points you are supposed to know. Please go on in your own way and give us whatever information you have.

The WITNESS. I know hardly anything about it. I only returned to the United States from a foreign cruise last October, and I have seen nobody or have had no connection or conversation with anybody in connection with the Fish Commission.

By the CHAIRMAN:

Q. There have been published, as you possibly may know, in the New York Press several articles attacking the Commissioner and his administration of the office. We are sort of groping in the dark. We requested the parties whom we supposed to be responsible for the articles to furnish the names of any persons whom they supposed we could get any information from. We wish you would go ahead and give us whatever information you can.—A. Four years ago a friend of mine, Lieutenant Wood, of the Navy, had command of a vessel, and he had some conversation with Major Furguson, who was the assistant commissioner, which resulted in Major Furguson publishing an article in the Baltimore Sun, in which he referred to Lieutenant Wood as a paltry lieutenant. I suppose that is the ground for it.

Q. That was some time ago?—A. Yes, sir; under Professor Baird's administration.

Q. I have a few questions to ask you. What do you know of the use of the Havre de Grace Station as a private shooting grounds; has it not also been used as a rendezvous for Democratic bosses, and have not repeaters been harbored there for days previous to the Presidential elections of 1884 and 1888?—A. I have no knowledge of those subjects.

Q. What do you know of junketing trips on Fish Commission boats at Government expense?—A. What I could tell you about that would be entirely hearsay evidence. I do not know whether you admit that. It would not be admitted in a court-martial. Lieutenant Max Wood—I think the clerk showed me a subpoena for him yesterday—was in command of this very vessel, and he can give you the whole thing, because he was in command of the vessel.

Q. What was the name of the vessel?—A. It was a yacht, which belonged to Major Furguson, and when he went out of service it was turned over to him. Max Wood commanded her for two years, and it was on account of Major Furguson sending him an order to get ready

to go on a pleasure trip that he had this trouble. Major Furguson was a civil employé with no authority of law. His position was not given him by law, and therefore when he wrote an order to Wood, Wood declined to acknowledge it. A year afterward he had tacked on to the appropriation bill a paragraph creating the office of assistant commissioner of fisheries. But before that time he was simply one of the employés taken on by Professor Baird without any officially authorized position.

Q. Do you regard Mr. McDonald as a scientist?—A. I really do not know anything about him, except I have heard him spoken of as really the practical working man of the Fish Commission.

Q. State instances of abuse under the Commission of which you have any knowledge?—A. The instances I know are things that came to me from hearsay, from my friends, and I believe they occurred four or five years ago.

Q. Under the present administration?—A. No, sir. I have not heard a word against the present Commissioner. On the contrary, I have been told by one or two men since I came home last summer that things were changed for the better since the old Commissioner went out.

TESTIMONY OF PHILIP T. YEATMAN.

PHILIP T. YEATMAN, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What is your full name?—A. Philip T. Yeatman.

Q. Where is your residence?—A. Alexandria, Va.

Q. Are you connected in any way with the U. S. Fish Commission?—A. Yes, sir.

Q. What position do you occupy?—A. At this time I am clerk in the superintendent's office.

Q. In the Central Station?—A. The Central Station.

Q. How long have you been in the employ of the Commission?—A. I commenced temporarily in 1885, for three or four months in the year.

The chairman read the resolution authorizing the investigation.

By the CHAIRMAN:

Q. That is the scope of your inquiry. Now, Mr. Yeatmann, your name was given to us by parties who had connection with the various newspaper articles. Have you seen certain articles published in the New York Press and other papers?—A. Yes, sir.

Q. We requested those parties to give us the names of any witnesses who they thought knew anything about those charges. Can you give us any information in regard to those charges which were made in the Press?—A. Only as to those referring to myself.

Q. Give us in your own way any information bearing upon this subject.—A. Well, I think the first charge was that I was a relative of the Commissioner's wife——

Q. Are you one of the relatives?—A. Which is untrue.

Q. You are not connected in any way whatever?—A. No, sir.

Q. With either the Commissioner or his wife or his family?—A. No, sir.

Q. Do you know how many employés of the Department have been appointed by the present Commissioner who are relatives of his or of

his wife or his family?—A. I do not think there is a single relative of his.

Q. Of his wife's?—A. There is one young man who is, I think a nephew.

Q. What is his name?—A. Mr. McCormick.

Q. Do you know Mr. Lewis, who is in the office?—A. Yes, sir.

Q. Is he not a relative also?—A. Lewis' brother, who is now dead, married a niece of Mrs. McDonald.

Q. Well, it is charged that there is favoritism there; that the Commissioner favors certain favorites, as to service and compensation. Have you any information upon that point?—A. I can only give you my impression, sir.

Q. Well, what is that?—A. I do not think there is. I do not think I have ever known a man to leave the Commission earlier than 4 o'clock. I always leave at half past 4 for the reason that I have to take the cars at that hour. I can not get off any sooner. There is a difference in compensation.

Q. An unfair difference? Of course we understand that different employés occupy different positions?—A. I think not. I do not know of anybody who receives less than I do myself. My own compensation is sixty dollars per month, and I believe that is about the lowest rate.

Q. You are employed in the superintendent's office?—A. I have been for nearly a year, but I have done general work.

Q. One witness who was before us stated that there seemed to be an entire lack of rules and system and business-like methods there, and that employés came about when they pleased and left about when they pleased. What can you say on the subject?—A. I do not think it is so right around me. There are only three or four there, and they are all prompt. I get there at half past eight. I am obliged to get there at that hour. And they are all there. They are laborers.

Q. Do you happen to know anything about the system of handling money which is derived from the sale of fish down at the Fort Washington Station?—A. I do not. I never had any occasion of seeing or knowing. I have been at Fort Washington as a messenger, but only for about three hours, bringing up fish.

By Senator BLODGETT:

Q. By whom were you first appointed?—A. I can hardly determine. In 1885, after two years of illness, I was in distress. I had been brought up on the water, and about fish, and I made application to Colonel McDonald. Now up to that time I had never laid eyes on him but once. I knew who he was.

By the CHAIRMAN:

Q. Was he the Commissioner at that time?—A. No, sir. His position was superintendent of distribution. Well, I met with no encouragement, but I brought all sorts of influences to bear upon Professor Baird, my Congressman, etc. I was very persistent; I needed it. After a while I received a summons, and was put in the office of the chief clerk to get up some records. That was my first employment, and I was employed about two months.

Q. Was that while Professor Baird was Commissioner?—A. Yes, sir; October and November, 1885.

Q. Do you know of anything to criticise in the management of the Commission?—A. I do not think I am capable of doing it. Everything has been perfectly orderly. I never saw any willfulness or insubordina-

tion or anything. There are a good many young men, and off duty they act like children. They have their little squabbles, but they do not interfere with their work. It is something that men of your age and of my age would not relish, but it would not come within the purview of the Commission. They are just like children in school. My own chief, Mr. Wolf, is a rigid disciplinarian himself. He does not stand any foolishness. He is a man of energy and considerable executive ability.

TESTIMONY OF W. B. BAYLEY.

W. B. BAYLEY, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What is your full name?—A. W. B. Bayley.

Q. Where is your residence?—A. Well, I am an officer in the Navy. I am on duty here at present; this is my official residence, Washington, I suppose.

Q. Are you in the employ of or connected with the United States Fish Commission?—A. Yes, sir, I am detailed for duty. I am an engineer officer of the Navy, and I am detailed to duty in the Fish Commission.

Q. What are your duties?—A. I have charge of all the machinery, the water distributing plants, and boilers, pumps, steam-launches, and also the men of the Navy connected with the Commission. We have twenty-one enlisted men in the Navy connected with the Commission on special duty. I have charge of them, also the machinery, the repairs at different stations and buildings, erecting new plants, etc.

Q. Is there a boat on the Potomac called the *Blue Wing* belonging to the Commission?—A. Yes, sir.

Q. Do you know whether persons, other than United States Senators, or Representatives, or employes of the Fish Commission, have taken trips on this boat to Fort Washington?—A. I believe that they have on the boat on her trip to Fort Washington, not for the special purpose of taking these people, but in going to the fort on duty they have taken a number of people, I understand.

Q. Not going on purpose?—A. Not on purpose.

Q. There have been certain articles published in the newspapers of late criticising the management of the Fish Commission?—A. I have seen them.

Q. And this investigation the Fish Commissioner requested to be ordered. The investigation is in pursuance of that request and was occasioned by these articles that were published in the papers. Have you read some of those articles?—A. I have; yes, sir.

Q. And among the charges, as you remember, was one that there was a great deal of nepotism; that the Commissioner had appointed quite a list of relatives of his family, or his wife, etc.?—A. Yes, sir.

Q. Will you tell us if you know anything about that?—A. Since these charges were published in the papers of course there has been more or less talk, and I have heard them brought up and the question discussed, and it was said that there were only two connections of Colonel McDonald's in the Commission, and they were holding very subordinate positions.

Q. Will you give us the names?—A. I think one is young Lewis, now the other, I do not remember what his name is.

Q. Is it McCormick?—A. I do not know; if there is one, he is holding a very subordinate position. I was never brought in contact with the people in the fish culture division. My duties are separate and distinct from them. There are a great many I do not know. I have been told that there are two, and this young man Lewis I know of. I really do not know him by sight, but I am told that these two are connected with Colonel McDonald.

Q. Do you know anything about favoritism in the management of the Commission? Have you observed that the Commissioner has certain favorites who can do almost anything, and others whom he does not care much about?—A. I do not think so.

Q. That has been charged generally.—A. I have never seen anything of that kind, and I do not think there is, because Colonel McDonald has always struck me as being a very conscientious man, and particularly so in his duties; and he would be the last to show favoritism.

Q. Do you know anything about employes of the Commission being under the influence of liquor at Fort Washington?—A. It would be pretty hard to prove that by me. I never saw a drop of liquor there in my life.

Q. Do you know whether Mr. Gay is a competent man, and whether money was wasted by him and Mr. McDonald at Put-in-Bay, and that the building was hurt in appearance by the lowering of the same, and that Gay was responsible for it?—A. Well, now, that perhaps would be simply a question of opinion. So far as I was concerned, I was placed in charge of the construction of that station. I have my orders here, if you care to see them—written orders from Colonel McDonald. What is meant by that is this: I was away on leave last fall, and while I was away (when I returned the chief clerk told me) the Commissioner had been called to Put-in-Bay, and I learned that Mr. Gay, who was inspector of stations, had requested the colonel to go there, and that, in his opinion, the building should be lowered.

By Senator BLODGETT:

Q. What connection had Mr. Gay with the Fish Commission?—A. He was inspector of stations. It was at his suggestion and recommendation that this was done. When I returned the Commissioner told me that he had authorized this, and he said, "You had better go out there at once and see about it." So I went out there, and according to my idea there was no necessity for this; and I thought it was rot, involving a great deal of expense, and I thought it was unnecessary to lower the building. I thought, perhaps, it would injure the appearance of the building, and besides, to overcome the grade, it would be easier to raise the wharf or lengthen the incline ways up to the floor so as to make the grade easier. That was simply a matter of opinion. The work had been authorized in the mean time, so that it was too late. That is what is meant. That is simply a matter of opinion. Mr. Gay thought it was better to lower the building. That was the whole thing.

Q. And Colonel McDonald authorized it?—A. Yes, sir; and when I returned from leave and took charge again it was too late. The work had been authorized and commenced.

Q. What do you know about a large outlay being made for pumps, tanks, etc., to carry shad over to Germany before a satisfactory arrangement was made with the steam-ship company?—A. I know all about that. The Commissioner ordered me, on my way to Wood's Holl, to stop in New York and confer with this steam-ship company, the German-American Packet Company. I went there. They told me that they would

let me know; that they would have to confer with their superintendent. I went to Wood's Holl and came back, and then they told me the question was such an important one that they would have to refer it to the head office, Hamburg; that they would know in two weeks. That was about the time it should be shipped, because they could not wait after June. Then it is impossible to get the eggs. So that it was necessary to have the apparatus ready by the time we got the decision. I bought the pump of Knowles. I had the apparatus put together here in Washington, so as to be ready when we received a permit, for the supposition was that there would be no difficulty about that, because the Dutch Government had requested it. It is a question they have been interested in for several years. The experiment was made once before, and failed, and this was to be an entirely new apparatus; and it was supposed, as they were interested in the question and had expressed themselves so, that there would not be the slightest objection to shipping it. But to our surprise word came from the company that they were afraid it would occupy so much space that they could not ship it. We could not have done anything else, because, even if we would have gotten permission, we would not have had time to get ready. We had an air-pump, a circulating pump, and the whole apparatus was boxed together in a very compact way.

Q. How much did it cost?—A. The pump cost \$209; the tanks and boxes, about \$70. I did not make that, so that the whole apparatus cost less than \$300.

Another point is, it is not thrown away, as has been stated, but is ready for use next season, and it is proposed to get a permit for some means of transportation and we will then be ready for shipment.

Q. Would it not have been wiser to have applied earlier and to have learned whether you could have made the shipment or not before the expenditure was made?—A. Well, possibly it would; but there was very good reason to believe that there would be no trouble in shipping it. It was not an apparatus that would have given them any trouble, for we proposed to send two men. All this expense was to have been refunded by the Dutch commission, so that the Fish Commission was not to have paid for it, and probably it will be paid for now when the fish are shipped.

Q. At present the Department is out?—A. Yes, sir; it is proposed next spring to ship it. As I understand, ever since 1884 they have been trying to get these eggs introduced, but one thing and another has interfered.

Q. Will you state as to whether a boat was bought in the New York market without public advertisement, whether that boat was a second-hand one, and whether several hundreds of dollars had to be expended on the same by the Fish Commission in alterations? Please state just what you know about that.—A. I was ordered to do that; I saw that in the paper, and so I anticipated it. If you will allow me, I have got the report which I made to the Commissioner. When I have been away on duty, involving any expense, I have been in the habit of making a report. This is my written report on the subject, and covers the whole ground. Shall I read it?

Senator BLODGETT. I think the witness had better read the report.

The WITNESS. I will do so. It is as follows:

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., June 5, 1890.

SIR: I have the honor to submit the following report in relation to the recent purchase of the steam-launch *Petrel* (late *Wavie*), on my recommendation, for the use of the Commission of Fish and Fisheries.

About the middle of March you instructed me to take immediate steps towards procuring a suitable steam-launch, to be used for the spring shad-hatching work on the Delaware River, and later in the summer to be used on Long Island Sound in the prosecution of the work in connection with the United States Coast Survey of the investigations of the ravages of the star-fish on the oyster beds in those waters. For this work it was deemed necessary that the boat should have about the following dimensions: Length 50 to 60 feet, beam 9 to 12 feet, draught 4 to 6 feet. It was thought best to purchase the boat in open market, as time would not permit the advertising for bids for the construction of a suitable boat, three months being the probable shortest time a boat of the size required can be built.

Section 3709, public contracts, Revised Statutes, of the United States, reads—

“When immediate delivery or performance is required by the public exigency, the articles or service required may be procured by open purchase or contract, at the places and in the manner in which such articles are usually bought and sold, or such services engaged, between individuals.”

You also informed me that the limit which could be allowed for the purchase of the boat was \$4,000. With these instructions in view I communicated with several of the leading yacht and steam-launch agencies in New York, and was soon in possession of full particulars of more than two hundred steam-boats which were offered for sale. Selecting from the lists a number of those coming nearest our requirement, I visited New York and Brooklyn and inspected them all very carefully. I found two of the large number offered us, in point of size, general appearance, machinery, and internal arrangements, to answer very nearly our requirements. Neither of the two could be bought for less than \$6,000, however, having cost their owners from \$7,000 to \$8,000.

Later the steam-yacht *Wavie*, T. S. Kennedy, 716 East Thirteenth street, New York, was offered the Commission for the sum of \$3,600. Upon a careful inspection of the boat, and after a steam-trial in which I had a good opportunity of testing her speed, sea-worthiness, and steering qualities, there being a strong sea in the bay at the time, I was convinced the boat was the best I could find, coming within the limit fixed by you, \$4,000. I therefore recommended the offer of \$3,400 for the boat, which was made and accepted.

With few exceptions boats of this size are built for service in fresh water, that is, they are not provided with tanks containing fresh water to be used in the boiler, and the metal work under water, condenser, screw propeller, rudder, etc., are of iron, which in salt water soon becomes weakened and is liable in time to destruction from oxidation. As the boat would be used in the waters of Long Island Sound and the vicinity of Wood's Holl, I recommended that the iron work be replaced by composition costing approximately, \$600. When these changes are completed the boat will have cost, in round numbers, \$4,000.

The boat, engine, and boiler were built in 1889, and are therefore practically new. I exercised unusual care in selecting the boat, and having a large number to select from I feel that I can safely testify that the Commission has procured a staunch and efficient steamer for a moderate price.

Very respectfully,

W. B. BAYLEY,
Passed Assistant Engineer, U. S. Navy,
On duty in the Fish Commission.

Col. M. McDONALD,
U. S. Commissioner of Fish and Fisheries, Washington, D. C.

By the CHAIRMAN:

Q. State the number and names of officers and enlisted men in the Navy who are assigned to duty in the Fish Commission.—A. There are twenty-one enlisted men. I am the only officer, except on the two vessels. There are two vessels; one is on special duty in the Pacific—the *Albatross*, and the other, the *Fish Hawk*, is a smaller vessel. They are manned by officers of the Navy.

Q. Detailed for that service?—A. Yes, sir; the officers are a class of officers called mates; they are not graduates of the Academy.

Q. How many vessels and launches are there belonging to the Commission?—A. There are two large steamers, as I say.

Q. The *Albatross* and the *Fish Hawk*?—A. Yes, sir; we have altogether seven steam launches.

Q. Do you know what the original cost of the *Blue Wing* was?—A. Yes, sir; I have seen in overhauling it. It was purchased some six or

seven years ago. I remember to have seen that she cost \$2,500. That was her cost. She was an old boat when she was purchased.

Q. Has not a large sum of money been expended on the same for repairs, furnishing, etc., in proportion to the original cost?—A. I can only say as regards my time. For the past two years I would say not. When I first came here it was said she wanted new boilers, and I inspected them, and I found she did not. By repairing I thought she would last. I had them repaired, and they are now in order, and as good as ever. The only expense has been in changing her deck houses, cutting them off to make it shorter, and give more room on deck.

Q. Could not a new boat have been bought for the amount of money that has been expended for repairs on the *Blue Wing* during the last three years?—A. Decidedly not; not a boat of the size and kind. She is not a very comfortable boat, but good enough for this river. She is weak, and not fit for outside work at all.

Q. Were you directed by Commissioner McDonald to take charge of the erection of a new fish hatchery building at Put In Bay?—A. Yes, sir; and I have my orders here now.

Q. Tell us about the site, etc.—A. The site was donated to the Commission. Afterwards we found it would be better to have more room. There was a road laid out and it was thought better to have this land extend back to this road so as to be accessible to the highways; so that this land now extends from the water's edge back to the highway. It was all donated.

Q. Did the first strip that Mr. Gay got for the Fish Commission run back to the proposed street, shown on the plan?—A. I have already said it did not.

Q. Did Mr. Gay show good judgment in securing such a small lot at first, having no outlet on the land side, except on private property?—A. There is a little question of looking a gift horse in the mouth; it was all donated. We made the request for more and got it.

Q. Did not Mr. Gay influence the Fish Commissioner to have the Put-In Bay hatchery building lowered considerably, and rock excavation being thus necessitated?—A. Well, it was done.

Q. Were you consulted about this change?—A. No, sir; I was not; because I was away on leave.

Q. Did you protest against it?—A. I did, when I returned; yes, sir; that is to say, after I had returned from leave, I told the Commissioner that I thought it was not necessary, and that it was better not to do it.

By Senator BLODGETT:

Q. Mr. Gay was performing your duties in your absence?—A. Mr. Gay was out there, and I think that he thought it would be better, and therefore recommended it to the Commission.

Q. What was Mr. Gay's authority?—A. That I do not know. Whether he was in authority to look after the work at that time, or not, I do not know.

By the CHAIRMAN:

Q. He was the superintendent?—A. Whether he was given authority to make recommendations, and in charge of the work, I do not know. There is no reason to believe but that he was.

Senator BLODGETT. And the Commissioner acted upon his recommendation?

By the CHAIRMAN:

Q. How much did it cost to lower it?—A. It cost about a thousand dollars.

Q. Did it add to the appearance of the building?—A. Well, I have not seen it since it has been up, but we have an inspector there, and he writes me that he does not think it does add any, that he thinks the building is too long for its height.

Q. Was not this needless expense the result of Mr. Gay's importunities on Commissioner McDonald to have the building lowered?—A. I think that question was answered before.

Q. Was this an expense additional to the contract price?—A. Yes, sir; that is, the contract price for the superstructure was so much; then the excavation of rock and earth was so much a cubic yard.

Q. In regard to this yacht, which you purchased in New York, for what purpose was she intended to be used?—A. I stated in my report in the beginning that the object of the boat was first to be used on the Delaware River in the shad hatchery, and later in the season in the Long Island Sound.

Q. How was she built?—A. As a yacht.

Q. A pleasure yacht?—A. Yes, sir; for private use.

Q. Where is she now?—A. She is on the Long Island Sound. She was ordered there a few days ago, and is probably there now.

Q. Was there a public advertisement in the papers for the purchase a steam-yacht by the Fish Commission; and, if so, in what papers did it appear?—A. I think that is fully stated in my report.

Q. In regard to this shipment of shad to Germany; do you know who was to be in charge of it?—A. I only know it was understood that Mr. Worth was to go in charge. He is the superintendent of the Central Station.

Q. Who was to blame for the expenditure of this large amount of money before ascertaining that the steam-ship company would allow the plant on board?—A. Well, of course that was the Commissioner's instruction, to go ahead; and, as I say, I think it is evident that he was justified, because if we had had to wait, we would not have had time to prepare the apparatus, even if we had got permission.

Q. Your reply would be "the Commissioner"?—A. Yes, sir.

Q. What did the pump cost that was used in the Put-in-Bay Station?—A. There were three pumps, the cost being between nine hundred dollars and a thousand; a little over \$900.

Q. For the three?—A. Yes, sir; two large and one small one.

Q. Were they let by contract when the rest of the machinery was?—A. No, sir; the specifications for the erection of the plant stated that the pumps would be furnished by the Commission. That was done on my recommendation, because I thought we could do better. I wanted a particular kind of pump, and I knew I could select them and have whatever changes made which were necessary.

Q. Do you know Mr. Waters, of New York?—A. Yes, sir.

Q. Has he done work for the Fish Commission?—A. Yes, sir.

Q. What is the work given to him?—A. He, in the first place, is the inventor of the Waters engine; there are two boats that were supplied with his engine, and also the Waters boiler, one of the launches, and one of our schooners, the *Grampus*. I put one on for the purpose of taking deep-sea temperatures. A party of scientists, three professors from Princeton University, last summer were engaged in taking deep-sea temperatures, the idea being to study the migratory habits of fish. That was the idea in view. This schooner last summer was fitted with that apparatus for taking deep-sea temperatures, as far as a thousand fathoms, with this Waters boiler, and I put it on because we had to have a special apparatus. I wanted a special type of boiler, a coil boiler, a tubular boiler, and I selected this.

Q. Why do you interest yourself so much in giving him work?—A. Well, in this case, I selected his boiler because I thought it was the best. Mr. Waters is given work now and then because he is supposed to be the best man. He is accommodating; he knows just what the Commission expect, and it is for the best interest of the Commission I have always found. Occasionally I have gone to him for information that I wanted, where to get machinery of special types—that is the only way. Mr. Waters, in the two years that I have been in the Commission, has only furnished this one boiler of his own; all the rest of the machinery was bought before I went in.

Q. What work he has done, was it got by public advertisement?—A. No, sir.

Q. Have you ever seen any of the employés of the Fish Commission working on McDonald's filter?—A. Yes, sir.

Q. Who worked on same?—A. Well, we have here at the Central Station two machinists, and each of them at times has been at work.

Q. Do you know their names?—A. Sauerhoff and Francis Barry. There are two Barrys in the Commission; this is Francis.

Q. It has been charged that Colonel McDonald was employing Government employés in getting up his filter which he had patented. Do you know anything about that?—A. Yes, sir; this filtering has been a source of great trouble. It has been a great trouble to get a good filter for the use of the Commission. A great many have been tried. Now, one filter has been in use for a long time, and to do its work properly it was found that it killed the fish. Alum is used to coagulate the organic matter in the water, and if there is too much alum it kills the fish. The Commissioner has studied that a great deal. The filters are used to furnish clear water to the aquarium in which different species of fish are kept. Now, he has hit upon this idea, and has experimented with it, and has brought it to perfection, simply for the use of the Commission. So far as I know, he has never sold one, and you will find down here at the Central Station three of his filters.

Q. They work?—A. Beautifully. They are automatic in their action.

Q. Do you know if he makes any charge to the Commission for the use of them?—A. I am positive he does not. These men have simply been employed—of course he was justified in doing it, I suppose—to work for the fish industry, to the interest of the Fish Commission, by experimenting. I think the Government recognizes the benefit of inventions so much that I believe they permit officers to patent inventions to be used in Government work free of cost. Now, I think Colonel McDonald has paid for his patent, but I think the law allows him to patent it free.

Q. The office charge?—A. Yes, sir. Do you know this filter; would you care to have it explained? It is a very nice idea; it is very simple.

The CHAIRMAN. I have seen it.

The WITNESS. It is automatic in its action; it requires no cleaning

By the CHAIRMAN:

Q. It has been charged generally, Mr. Bayley, that in the management of this Central Station there is an entire lack of rules as to hours of service. It has been charged in some of these newspaper articles, and I would like to have you state what you know about it, that employés come and go when they please. It has been charged that the general management and discipline of this Central Station were loose. What can you state on that subject?—A. I only know this, that it was charged that a draughtsman, who was under my orders, was going

out a great deal when I was away. My duties call me to different stations. It was charged that when I was away he would go out.

Q. What was his name?—A. Blaisdell. I simply called his attention to the rules. This was brought to my notice by the chief clerk. He said that it was demoralizing to the other men; that they saw him going out at all times. Consequently I reported it to the Commissioner, and the Commissioner had an order written, which was sent to me, and I handed it to him calling his attention to the regulations in regard to hours, and that he must abide by the rules.

Q. Were you familiar with his work?—A. Yes, sir.

Q. Do you consider him a competent and skillful man?—A. I consider him a competent draughtsman, but not a designer. My specialty is engineering, and I know that he knows nothing about mechanical drawing. So far as architectural draughting is concerned, I am not really competent to judge. I know this, that his drawings for the Put-in-Bay Station had to be changed at the request of the contractors, because it was shown they were faulty.

Q. Is he still in the employ of the Commission?—A. No, sir.

Q. Do you know why he was dropped?—A. He was dropped, as I understood, partly because there was no work and partly because he had been insubordinate in many ways, and I remember on one occasion of being shown an extract from a letter, a newspaper article, that had been published in Missouri somewhere.

Q. Written by him?—A. Yes, sir; it was supposed to have been written by him.

By Senator BLODGETT:

Q. Reflecting upon the Commissioner?—A. Yes, sir; upon his management.

Q. Reflecting upon his superiors?—A. In regard to the station in Missouri, I have never had anything to do with it, because the water supply is by gravity. Consequently I have never had anything to do with it.

TESTIMONY OF PERRY S. HEATH.

PERRY S. HEATH, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Where is your residence?—A. I am temporarily in this city.

Q. Are you in the employ of the Fish Commission?—A. No, sir. Never was.

Q. Never have been?—A. No, sir.

Q. Have you seen some newspaper articles published in the New York Press and other papers making various charges against the management of the Fish Commission?—A. Yes, sir. I have read most of them, I think.

Q. Will you in your own way just tell us what you know about the substance of these charges?—A. I really know nothing about the truth of any of the charges from my own knowledge. I am a newspaper correspondent myself, and I have handled some of these articles. They came to me from various directions. I think I published in the Indianapolis Journal and the Omaha Bee, the papers I represent, practically the general information contained in the New York Press dispatches, but I did not go into the details.

Q. You say you used that; you took it without investigating it your-

self or did you undertake to make any investigation yourself as to its correctness?—A. No, sir.

Q. You assumed that they were correct?—A. From the statements that came to me from newspaper correspondents. I know nothing about the composition of the Fish Commission. I am not personally acquainted with any man upon it. I think I never saw Commissioner McDonald, and I do not think I would know him if I were to see him. I have never heard anything directly affecting the integrity or the honesty of Commissioner McDonald. Most of the information that I have handled dealt in generalities.

Q. Then, of your own knowledge, you know nothing about the management of the Commission or have no personal knowledge of any of these various charges which have been made in the New York Press?—A. No, sir. I have never seen any of their orders, their directions or any of their papers that would give me any knowledge as to the truthfulness of these statements.

Q. If there is anything wrong or loose about the management of the Commission we want to find it out. Do you know anything of your own knowledge, except what you have seen published on that point, and can you give us any information which would aid us in our inquiries; if you can give it, in your own way please do so.—A. I looked up the files of the newspapers I represent, and thought I could just hand you the dispatches I have written, so that you would know whether they contained anything of interest to you. I had unbroken files. It is possible that I might be able to look them up. I think Mr. Garthe, of the Baltimore American, has submitted, or will submit, copies of his dispatches to the Baltimore American. Our information, the source and the character of the matter published, is almost parallel, duplications I think, so that what he will submit to you will cover what I have written and what I know in fact.

By Senator BLODGETT:

Q. What papers do you represent?—A. The Indianapolis Journal, the Omaha Bee, and the Columbus Dispatch.

Q. Did the articles appear in each of these papers?—A. Yes, sir; I think in all of them.

TESTIMONY OF JOHN E. BROWN.

JOHN E. BROWN, being duly sworn and examined, testified as follows

By the CHAIRMAN:

Q. What is your full name?—A. John E. Brown.

Q. Where is your residence?—A. Washington.

Q. Are you in the employ of the Fish Commission?—A. I am.

Q. How long have you been in the employ of the Fish Commission?—A. About ten years; well eight years, I have been there at the Central Station. I have been there at the Central Station since 1882.

Q. What position do you occupy?—A. I am in charge of the distribution of property.

Q. Cars?—A. Cars, cans, and everything connected with distribution.

Q. Did you occupy that position under Professor Baird?—A. No, sir.

Q. What was your position under Professor Baird's administration?—A. I had charge of that, and was acting superintendent in charge of

property generally, not only in the Fish Commission but a great deal of Museum property that was there a great deal of the time. The Armory Building, some seasons of the year when there was no work, would not be open and there was a great deal of Museum property at the Commission I would be over there and if anything was wanted I would go over there after it.

Q. During the life of Professor Baird the Smithsonian Institution and the Commission were pretty intimately connected?—A. Yes, sir; he was Commissioner of Fisheries and Secretary of the Smithsonian.

Q. What salary did you receive at that time under Professor Baird?—A. Well, I started in at \$45 a month. The professor raised me to \$100 a month.

Q. Who is superintendent at the Central Station at this time?—A. S. G. Worth.

Q. From what State was he appointed; do you know?—A. He is from North Carolina, and I suppose he is appointed from there; I do not know.

Q. What is his salary?—A. Eighteen hundred dollars; \$150 a month.

Q. At the time of Professor Baird's death how many men were employed in the Central Station to care for the distribution of the property and to carry on the shad production?—A. About seven, I think. I could not tell without looking.

Q. About what was the pay-roll for running the Central Station at that time; could you state?—A. I could in a minute, sir. It might not be exactly right. I will give it to you as near as I can from memory. [After making computation.] Well, right in the busiest season it would be somewhere in the neighborhood of \$500.

Q. Five hundred dollars a month?—A. Yes, sir; that would be the very busiest season. Then a number of these men would be dropped, and it would run down.

Q. Run down to what?—A. Probably drop down to \$400, I should think.

Q. Is there an increase in the number of employés at this time engaged in the same work outside of the officers of the Commission?—A. Well, yes, sir; I think there is; I do not know so much about that. I am not situated so as to know. I have not given any attention to it. My duties are entirely in another place. I see a great many more around there, but I can not tell.

Q. How is it in your own department; have you more help than prior to Commissioner McDonald's coming in? Your own force; is it larger than it was under Professor Baird?—A. My duties are entirely different. I only have charge of the distribution of property now. Before that I had charge of everything going in and out for all the other stations, and now the superintendent of the Central Station has charge of everything sent there and everything coming out. I had charge of that. My duties are now entirely different from what they were before.

Q. It has been charged in some newspaper articles and by one witness who was before us that there was a great deal of looseness in the observance of the rules as to hours; that employés, many of them, came late if they chose to and went away early, and that the discipline, you may term it, at the Central Station here was very lax; and that everybody did about as he pleased. What can you say on that point?—A. I should have to say that that was the other way since Mr. McDonald has been there and particularly in our department. I know our men are prompt. The messengers and clerks are on time, and they are

not away without getting permission ; not even to go up town without getting permission from the proper person.

Q. Do you know anything about the number of relatives of Commissioner McDonald or of his wife's or connected in any way who are employed in this Central Station. It has been charged in the papers that there were a long list of such ?—A. There is but one whom I have heard of, who is Col. McDonald's nephew.

Q. What is his name ?—A. Francis McCormick, I think, I am quite sure ; and then there is one Lewis there that I have understood was a relative of the colonel's wife, but I do not know him.

Q. What position does he occupy ?—A. He has been a clerk. He was record clerk down at Fort Washington this summer. He has had different positions about the Armory Building, and then there is his brother who has been a messenger on the car. I do not know that they are any relatives of the colonel. I have always understood that they were.

Q. Are those the only ones you have understood were relatives of his family ?—A. The only ones that I could state under oath. I have heard of others, but they are the only ones that I have good reasons to think are relatives of Colonel McDonald's that I know anything about.

Q. Were you appointed to your present position by Commissioner McDonald, or did you hold it before he came in ?—A. No, sir ; I was transferred from the Central Station to the Division of Distribution. I have been directly under Colonel McDonald ever since 1882, until he was appointed Commissioner.

Q. What I want to know is whether a good share of your service was under Professor Baird as Commissioner ?—A. Yes, sir.

Q. Were you advanced by Mr. McDonald after he came in as Commissioner ?—A. I was advanced on Colonel McDonald's recommendation, but Professor Baird advanced me.

Q. To Professor Baird ?—A. Yes, sir.

Q. And you have held the same position you now hold ever since McDonald came in ?—A. Well, he appointed a Mr. Seal Acting Superintendent, and for a while I reported to Mr. Seal.

Q. That was because you were on detached service ?—A. Yes, sir ; to a certain extent. I sometimes go on a car, if necessary, and then occasionally I go out with fish.

Q. Do you know anything about the method of the car service ; that is, when a car goes out to distribute fish does the car have a cook on board ?—A. Yes, sir.

Q. Does the Department furnish the supplies for the trip ?—A. No, sir.

Q. Who does ?—A. The captain in charge of the car is paid \$100 a month ; his assistant messenger is paid \$75 a month ; the apprentice messengers get \$45 a month ; then he is raised after a year or so to \$60, and then if he gets to be an assistant messenger he gets \$75 ; and the messenger in charge, the captain, gets \$100 a month ; the cook gets \$45 a month, I believe. Then there is \$15 taken off of each man's pay for the mess, and they spend that themselves. If there is any money over, which there is sometimes, when they are traveling about where provisions are cheap and plentiful, they save a little, and when they are going across the plains where provisions are high they sometimes lack a little.

Q. So that they furnish their own subsistence —A. Yes, sir.

Q. Have you any knowledge of any fish car being furnished with

champagne, and wines and cigars at the expense of the Commission?—

A. I do not think there is anything of the sort.

Q. You do not know of any such?—A. No, sir. I would be very apt to know, because they come not exactly under me, but I have charge of them, and they only have such such things as they have a right to have for their own personal use. I know there is nothing of that kind.

Q. If any supplies were furnished the mess furnished it themselves?—

A. Yes, sir; I know there was never such a bill put in; there might have been in old times, but not in late years since I have had any thing to do with it.

TESTIMONY OF THOMAS B. FERGUSON.

THOMAS B. FERGUSON, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Where is your residence?—A. In Washington, at present.

Q. Are you at present connected with the Fish Commission?—A. Not at all, sir.

Q. Have you been in former years?—A. I was for ten years, I think, connected with it; since 1878 or 1879.

Q. Was that during the time when Professor Baird was at the head of the Commission?—A. Yes, sir.

Q. What was your position and duties during that time?—A. I was Assistant Commissioner, and had general charge of work under, of course, Professor Baird's supervision.

Q. When did you leave the service?—A. About three or four months after Professor Baird's death; shortly after the appointment of Professor Goode as Professor Baird's successor.

Q. Have you known much about the affairs of the Commission since you left it?—A. Almost absolutely nothing. I have known very little except in reference to two stations; one is Wood's Holl establishment, because my residence is there during the summer, and I know very little of that except what I am obliged to see, as I sail about the harbor; and the other is the Battery Island station, which I have visited frequently; but outside of that I know little or nothing.

Q. Do you know whether very many changes have been made in the personnel of the Commission since Mr. McDonald took charge?—A. I know nothing of my own knowledge; nothing positive; only hearsay, and what I have seen from some articles in the papers.

Q. You speak of articles in the papers. Very recently there were some charges made, and a request was made by Commissioner McDonald for an investigation. The articles were, I think, largely in the New York Press and other papers. Have you read some of those articles?—A. I have only seen two of the articles, one a Sunday issue, and one on the following Monday.

Q. Which would be about May 25?—A. Yes, sir.

Q. In those articles it was charged that there were a large number, probably twenty or thirty employés of the Commission, who were relatives of Commissioner McDonald or his wife; do you know any thing about that?—A. Absolutely nothing.

Q. If you have read those comments in the articles referring to the Commission, and know any thing about any of the charges, tell us in your own way any thing that you know about them. We are a sort of a drag-net; and we want to get at any thing there is; we are seeking

for light. Do you know any thing in regard to any favoritism. I will read you the resolution.—A. It is hardly necessary. I read it in the Record.

Q. Do you know what the scope of this inquiry is?—A. Yes, sir.

Q. If you can give us any information which would come within that, or generally bearing upon the management of the Commission, we would be glad to have you do so.—A. As I say, I know very little of my own knowledge of the Fish Commission now. After eleven or twelve years, in fact fourteen years of work, after my connections were severed with it, I tried to know as little as I could of it. As I say, the only things that have come under my personal observation at all have been the conduct of those two stations, and I do not conceive that they have any thing to do with this investigation.

Q. We take the liberty to go outside. You speak of Wood's Holl; what can you say as to the general conduct of that station since the present Commissioner came in?—A. Well, simply, that from appearances very little has been done there. I never have been inside of the building since I have been out of the Commission.

Q. Do you know whether the persons in charge have been changed or not?—A. Oh, yes, sir; the personnel has been very much changed since my administration, or Professor Baird's administration. During Professor Baird's administration Mr. Atkins was the man in charge of the station, and I believe a Mr. Dauer has been in charge.

Q. Do you know, from your observation or from other sources, as to the comparative amount of work done there, whether it is more or less than formerly?—A. As I say, I never have been inside of the building since I have been out of the Commission. From outward appearances I think very little has been done.

Q. Could you judge of what was going on inside without going in?—A. No, sir; I could not. I do not care to judge.

Q. In short, we would be glad, if you have any knowledge or any statement to make as to the general conduct of the office, as to the administration of the office, any comments to make upon it, if in your own way you would favor us with it?—A. As I understood the resolution that you referred to, this matter of changes is involved, and I would say this—because you have asked as to changes that have been made in the personnel of the Commission and the salaries—I know pretty much the personnel of the Commission at the time of Professor Baird's death; but the office of the Commission would show that very readily, if you call for a list of the employés and their salaries, or they can be got from the Treasury, and then the present list, and they can be compared. I had a duplicate paper of all the employés, and I kept it in my office for some time; they were simply duplicates that I had for my own work; but they were not important papers and they have been destroyed long ago. They are within your reach either from the Commission itself or from the Treasury.

Q. It was charged in these papers that Colonel McDonald employed a large number of relatives; do you know anything about that?—A. Not at all, except from hearsay. I have heard that these young men, these relatives, had been employed. I heard it rumored before I saw the article in the paper, but I know nothing of it—absolutely nothing of it. Of course there have been rumors, but I have no knowledge of them whatsoever. One of the rumors, I think, was in reference to Captain Collins and his relatives.

Q. It was charged he had two or three relatives there?—A. Yes, sir.

Q. It says that Colonel McDonald had a large number of relatives

either of his own or his wife's; you can not state as to that?—A. I can not state at all, for I am not acquainted with any of them. As I say, of course a great many rumors have been afloat, but they were simply rumors, and I have never taken interest enough in the matter to verify it in the least. Therefore I know nothing of my own knowledge of the conduct of the Commissioner, except the controversy that you know of, the legal controversy that has been going on between the Fish Commission and myself, and what I have seen of the administration of that one station, because that is my outing place and that is all that has come immediately under my observation. I could criticise very severely Colonel McDonald, as far as the suit is concerned.

At 12.30 o'clock p. m. the subcommittee adjourned until to-morrow at 10 o'clock a. m.

WASHINGTON, D. C., *June* 18, 1890.

The subcommittee met at 10 o'clock a. m. pursuant to adjournment.
Present: Senators Stockbridge (chairman) and Blodgett.

TESTIMONY OF EDWARD S. RAYMOND.

EDWARD S. RAYMOND, being sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Where is your residence?—A. 928 K street.

Q. Washington?—A. Yes, sir.

Q. Are you in the service of the Fish Commission?—A. I am not; no, sir.

Q. Have you ever been?—A. No, sir.

Q. Have you seen articles published in the newspapers recently, particularly in the New York Press, making various statements with regard to the management of the Fish Commission?—A. Yes, sir.

Q. Have you any personal knowledge coming within the scope of these attacks upon the Commission?—A. None whatever; no, sir.

Q. Do you know anything about the management of the Fish Commission?—A. I do not, sir; I do not know why I was summoned here.

Q. You have no knowledge touching that matter at all?—A. None whatever. I have had very little dealings with Colonel McDonald, and know nothing about it personally. Of course I have read and heard, but know nothing. Perhaps I can tell why it has been brought about. I made application there for a position, and the position was given to somebody else, and perhaps they thought I had some grievances about the matter. Still I have none whatever.

Q. Have you had any conversation with anybody about this investigation?—A. Well, I do not remember as I have. I am boarding in the house with gentlemen who are employed in the Fish Commission, and what conversation I have had I may have had with them. Of course I have read the papers, and I am sort of interested in the proceedings.

Q. You say you applied for a position in the Department?—A. Yes, sir.

Q. When was that?—A. I made the application the latter part of April.

Q. Have you any reason to believe that you were treated unfairly as

regards that application?—A. Well, I have no right to judge, of course, in that matter. They appointed somebody else, and they thought perhaps I was not a fit subject to fill the place. I do not know why the appointment was made. I know nothing about that.

TESTIMONY OF GEORGE H. H. MOORE.

GEORGE H. H. MOORE, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Where is your residence?—A. My home is Havre de Grace, Md.

Q. Are you in the employ of the Fish Commission?—A. Yes, sir.

Q. In what capacity?—A. Superintendent of distribution.

Q. Superintendent of distribution from that station?—A. Of all the stations. I suppose that to be my title. I am designated as superintendent of distribution, and I suppose it takes in all.

Q. Have you seen a series of articles, published principally in the New York Press, making certain charges as to the administration of the office?—A. I have read some of them. I could not say that I have read all.

Q. You have read some of them?—A. Yes, sir.

Q. The first article published, if my memory serves me, was the 25th of May, quite a long article, in which the Commissioner was charged with nepotism to large extent and favoritism. Do you think you read that article?—A. Yes, sir; I think so.

Q. Do you know any thing as to the truth or falsity of those statements?—A. Well, I might say that I can only answer that in a general way. Of my own personal knowledge I do not. Hearsay evidence I suppose is of no value.

Q. Do you know of any relatives of Mr. McDonald or his wife who are employed in the Department?—A. There are those who are said to be relatives of his wife.

Q. Can you give their names?—A. Well, there is Mr. Lewis, C. C., and his brother whose initials I think are R. E., I am not positive about that, and Mr. McCormick.

Q. Those you think are relatives?—A. I am told so, sir.

Q. Are those all you know of as being relatives of his?—A. They are.

Q. Do you know them personally?—A. Yes, sir.

Q. Are they, in your judgment, competent and efficient in their positions?—A. I never heard any complaint against them. They are not in my division.

Q. Do you know how this matter of these messengers, or whatever you may term the men who are sent out with a car, is managed; how do they subsist on those trips; does the Government put in the supplies for their use upon the trips, or is there a mess, and do they themselves defray the expense?—A. Years ago the Government paid for what provisions they used; a party was put in charge of the car; but that was found expensive, and the cost of the cars was so widely divergent that it was deemed best to make a stated allowance for each man, and it was put at \$15 a month, and they now buy their own provisions.

Q. They are allowed \$15 a month?—A. That is a part of their salary.

Q. And they furnish their own subsistence?—A. Yes, sir; and they furnish their own subsistence.

Q. When was this change made, or about when?—A. Well, I should say about five years ago, four or five years ago.

Q. That change was made under Professor Baird's administration?—A. Yes, sir.

Q. And it has been continued under the present Commissioner?—A. Yes, sir.

Q. Do you know at any time of wines and champagne and cigars being furnished at the expense of the Government upon such cars?—

A. No, sir.

Q. Do you know any thing about the way in which the money received from the sale of fish taken by the Government seines was disposed of—as to whether those fish are sold; and, if so, how the money is treated?—A. I know nothing about it.

Q. Are you here a good deal of the time?—A. Most of the time, sir.

Q. It has been charged that in the central office here there was very lax discipline; that the employés came and went about as they pleased, came late and went early, and that there was very little to do, and that more help was employed than was necessary to do the current work of the station; can you state any thing about that from your observation or otherwise?—A. I can not, only as to my own division.

Q. Then you must be able to state something upon that point from your observation?—A. Well, I find that about all I can attend to is to the affairs of my own office, and I know that the employés there keep very regular hours. As to the other divisions I could not say positively that there is any loose system about it. I am not in a position to say.

Q. It never has come under your observation?—A. No, sir; I could not say that it has.

Q. It has been charged that the Commissioner has his pets and favorites, and that they do as they please, while others are held very rigidly to their duties; can you say any thing about that?—A. I do not think that is true.

Q. It has been charged that the Commissioner has used Havre de Grace for a shooting place for himself and friends; have you any knowledge upon that point?—A. I do not think that Colonel McDonald has ever been in Havre de Grace twelve consecutive hours since I have known him.

Q. Do friends of his go and quarter themselves upon the stations to indulge in shooting?—A. I have never known such to be done.

Q. It has also been charged that that has been made a point where repeaters and Democratic voters have been held, so as to have them on hand for elections; do you know as to the truth of that?—A. Well, I should say that certainly was untrue, because the employés at that station are employed, the majority of them, only a month or two each year, and that in the spring during the shad work.

Q. That does come during the election time?—A. Not to my knowledge.

Q. Do you know of any abuses existing at this station for which Mr. McDonald or any of his subordinates are responsible; that is, any mal-administration?—A. Well, to go into that now would require a reflection upon some, whom, of course, I feel a delicacy in assailing. I think the expenses of the station itself, that is of the superintendent of that station and his employés, could be materially reduced, but I have no right, I suppose, to criticise the actions of the Commissioner, who certainly has entire charge of that matter, and it is beyond me, I think, to criticise him.

Q. What we are after is a thorough investigation of the general management of the station, and if you think the Government suffers from the employment of more help than is necessary or any abuses of that kind we would be glad to have you say so.—A. I think criticism is very easy, sir, and I would defer to Colonel McDonald's judgment in the matter, I think. I think that Colonel McDonald's judgment is better than mine would be; we do not all agree as to ideas, and I think too much of Colonel McDonald to criticise him in any way unjustly.

Q. Does Colonel McDonald stand high with the scientific men of the country in this particular Department?—A. That is a question I am not in a position to answer. I am not acquainted with scientists myself.

Q. If there is anything touching this general subject which you desire or are willing to state here which would have a bearing upon it please do so in your own way.—A. I would sooner be excused from any further answers, sir.

TESTIMONY OF L. G. HARRON.

L. G. HARRON, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Where is your residence?—A. Maryland; Prince George County.

Q. Are you in the employ of the Fish Commission?—A. Yes, sir.

Q. In what capacity and what is your position?—A. Well, sir, in the spring season I have charge of the seine at Fort Washington, and at other seasons of the year doing different kinds of work, sometimes upon the cars and sometimes at the ponds, and sometimes around the main office.

Q. How long have you been in the employ of the Commission?—A. Six years.

Q. That dates back to Professor Baird's administration.—A. Yes, sir; I was not there permanently six years.

Q. But at different times?—A. Yes, sir.

Q. You say you are in charge of the seine at Fort Washington?—A. Yes, sir.

Q. Have you been there six years?—A. Yes, sir.

Q. Will you tell us what you do with the fish? I understand after the spawn is preserved the fish are sold?—A. Yes, sir. They are sold to pay the expense of the seine.

Q. And the money received goes to pay the expense of the seine?—A. Yes, sir.

Q. Is it usually sufficient to pay that expense?—A. It usually is—yes, sir.

Q. How has it been this year?—A. This year I do not really know exactly, but I think it is a little behind.

Q. The catch was light this year?—A. Yes, sir.

Q. Do you know any years when there has been an excess of money over and above the expense of the seine, and what has been done with that money?—A. Well, I could not say exactly; I do not keep the books myself, and I do not know exactly what was realized from the seine or what was expended.

Q. Where are you now employed?—A. I am now employed at the headquarters of the Fish Commission.

Q. At the Central Station, as it is called?—A. Yes, sir.

Q. In some newspaper articles, which perhaps you have seen, the Commissioner has been charged with employing a large number of

relatives of his own or his wife's family connections; do you know anything about that?—A. No, sir; I do not know that he has a relative in the Commission.

Q. It has also been charged that at the station, particularly, the discipline and rules are very lax, that employes come late and go early and have very little to do. What can you say upon that point?—A. Well, sir, I think that is not true, as far as I know. I do not know of anything of the kind. I know I have to be there on time and I leave on time, and if I want a few hours off I get permission.

Q. If you know any thing about the management, which in your judgment is wrong and ought to be corrected, and for which the Commissioner ought to be censured, you will please give us that information.—

A. As far as I know, Colonel McDonald is about as conscientious a man as there is in public life to-day. That is my belief about it.

Q. You believe him competent for the position?—A. Yes, sir; perfectly competent.

Q. Do you know of any undue favoritism?—A. Not the slightest.

Q. He has been charged with having his favorites and pets, and that they could do almost any thing, while others were held pretty rigidly to the rules?—A. I think that is all untrue, as far as I know.

Q. It is charged very strongly in these papers that at Fort Washington you men who were stationed there, some of you, in some way connected with the station, kept liquor, which was furnished not only to the employes, but to outside parties, sold to them; do you know any thing about that?—A. That certainly is a falsehood.

Q. Who is the officer in charge there of the station?—A. S. G. Worth for the last three years.

Q. Have you ever seen Mr. Worth intoxicated?—A. No, sir; I have not.

Q. He is not addicted to the use of liquor, so that it interferes with his duties?—A. No, sir; I think not. I have seen him for three years but I never saw him under the influence of liquor that I know of.

TESTIMONY OF WILLIAM H. BRIGHT.

WILLIAM H. BRIGHT, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Where do you reside?—A. I live at 494 Maryland avenue.

Q. You live in Washington?—A. Yes, sir; I have been here for two months.

Q. Are you in the employ of the Fish Commission?—A. I am not, sir.

Q. Have you ever been?—A. I have been, yes, sir. From the 15th or 16th—I do not recollect which date—of January until the same date in May.

Q. This last May?—A. This last May; yes, sir.

Q. You were employed by Mr. McDonald, the Commissioner?—A. Yes, sir.

Q. In what capacity did you act?—A. Well, I was sent out from here to Colorado as an assistant at that station, but I did not see any assistant. That is the way my appointment read; I am pretty certain it did.

Q. As assistant superintendent?—A. No, sir, I do not think so; as assistant simply, the word "assistant."

Q. How long did you remain there?—A. I was there four months.

Q. What were your duties there?—A. Well, when I first went there the first two months I did not do any thing, much; sort of got around in the morning; there were four of us there, the superintendent and three other men. We would get around in the morning and take out a few fish eggs, and the other men, Mr. Martin and Mr. Lewis, they were outside, would dig a little, a few trenches, but very little, and probably work, say, a half a day in the week. The weather was very inclement; the snow was very deep there. And then after that I went into the hatchery, when the fish were hatched.

Q. When the season came on?—A. When the fish were hatched. When the eggs begin to hatch you have to take care of the young fish, and they are picked out; you have to pick out the dead eggs every morning, and we were building a house there, a big hatchery. I built a hatchery there and Robinson told me, and I guess it is true, that it cost \$13,000 a year. I would go over there and look at that once in a while, and I told Mr. Robinson—I am a builder—"this is the worst built house I ever saw in my life; I never saw such a built house for the public, for the Government; I never saw any thing like that in my life as a house." The hatchery they have is built up in the gulch, and it cost \$1,300 to bring the water to it; they built it up in the gulch and they took the water from the left-hand side of the gulch, around and brought it to this hatchery and went right under the spring where the water is probably 250 feet. They had good cabins; there was one cabin there, I think 28 or 30 feet long, that they could have moved up there and used, and it would have been a better location than down in the gulch.

Q. Who was in charge of that station?—A. E. M. Robinson, I think it is. He would go to town, and he was drunk about all the time; that is about the truth of it. He was drunk at the station; lying in bed drunk with a jug of whisky there. There was another man there named Lewis, whom I do not know any thing about. I never saw him before. He would go to town also, and I got to talking to him as men will—I was from Virginia—and we got to speaking about the war, etc., and I told him where I was during the war. I told him that I was here, one of the first men to defend Washington with Cash Clay. He said that Grant ought to be hung, etc. I told him "You are drawing your living from this Government, sir, and you ought not to talk that way, even if you feel so." He said that Colonel McDonald, I think he said, was his uncle, and this Fish Commission could not run without Colonel McDonald, and that Colonel McDonald would not dismiss him or Robinson.

Q. Why did you leave; how came you to leave the employment of the Fish Commission?—A. Well, it was on Saturday morning; I had my order, my check, and I went over to Leadville. This man Lewis would go away and stay a week and Robinson would never say a word. I asked Mr. Robinson if he would allow me to go to Leadville, which was 6 miles from there, and draw some pay; I wanted to pay my bills and get some groceries, and he said yes. I was going over with Hunt, the gentleman who keeps the hotel there, and I said, "Robinson, I will be back." At that time I was attending to these little fish. I said I would be back, I think, by 12 o'clock, and we had then got some fish out in the ditches and of course I had to feed to them the same as the others and take care of them, and I said, "I think I will be back at 12 o'clock." I said, "You fellows never can get back for two or three days, but I can get back by 12 o'clock." So I went over

with Mr. Hunt, and Mr. Hunt could not get back at 12 o'clock; he got back at 1; he wanted to see Judge Marshall on some business when he got back. Before I got to where the ditches were I saw this man Lewis standing looking on. I paid no attention to him; I have no use for Lewis anyhow, and I went up to the hatchery, and after a little while Robinson sent up for me to come back and bring a bucket and net, and I found when I got there that two-thirds of the fish that were in these troughs were dead, and I said, "This is something very strange; this has run out up here, and you fellows stand round here and you are doing nothing; you stand around here and just let this water run out. I have had a heap of trouble to raise these fish and I do not like it." And Mr. Robinson says—this is hearsay—

Q. We do not care about the hearsay.—A. Well, as I said, I saw Lewis standing there, and myself and Robinson, his wife came there, and his sister, and he wanted to make a play as though he wanted to do something; "if you had come back these fish would not have died."

Q. What time did you get back?—A. I got back at 1 o'clock less five minutes, sir. I said to Mr. Robinson, "I go to the city and come back as a gentleman, and I propose to act as a gentleman, any way; I came here within fifty-five minutes of the time I said I would come, and you fellows have let these fish die. I did not go over there and come back and act like a big drunken loafer, and neglect my business, as you have done, and if you say it is neglect of mine to let those fish die, you are simply a damn liar."

Q. Did he discharge you then and there?—A. No, sir; about a week after that; for that reason, I got a notice; it was for insubordination, and then I wanted to see Colonel McDonald to know what this insubordination was, and I can see the Emperor of Russia as easily as I can him. In that building out there there is a space of that much [indicating] clear around that building where it has been excavated, and that has stood open, and I said to Mr. Robinson, "For heaven's sake go and turn that water off and keep that building from washing down." It is all breaking inside now and it is the worst thing that was ever built, I reckon. This water comes down the gulch in the spring, and it was a small river, they are little rivers, and going in around that house, that foundation and all through it, ever since the snow commenced to fall.

Q. You think there is not good care taken of the building?—A. No, sir. No more care taken of it than if it was nothing.

Q. Do you know as to how many relatives of Mr. McDonald are employed in the service of the Commission?—A. I do not. I know of this man Lewis, and he is the only one I know of. He has a brother over here, I understand.

Q. Have you ever been employed at this Central Station?—A. No, sir. I have never been employed there.

Q. Who is the man in charge of the station in Colorado?—A. E. M. Robinson.

Q. Do you know who he was appointed by?—A. I do not know. By Mr. McDonald, I should suppose.

Q. Do you know whether he was in the service before McDonald came in?—A. No, sir. He is a North Carolinian; he was born in Georgetown, but came from North Carolina to Colonel McDonald, and Colonel McDonald appointed him. I think he first went to Wytheville.

Q. Is that a fish station?—A. Yes, sir; over in Virginia. Those are

all the relations that I know of except this young man, who they tell me was this man Lewis's brother; there were two of them. And this man Robinson is entirely incompetent, that is I do not mean to say but that he may be competent enough, but I will show you this one little item: He wanted a boarding-house to board his men; he is a natural-born boarding-house keeper; people are born for certain professions, and he is a boarding-house keeper. This cabin could have been moved and put where it was. There was \$125 for himself, and Mr. Lewis \$90, and I do not know what Martin was getting, but I do not think as much, and they were the last week in April and 17 days in May counting the amount of money that they were paid. They were that long using a cabin that was 16 by 24; there were that many days' labor performed on it, besides having a team there and what the material cost to build that cabin, and I figured that cabin at \$350, and I could have it built for \$60.

Q. So you think the man in charge is not a very good manager?—A. There is a specimen of it, sir. When the time comes to go out and see about the spawn they go over, and they take a wagon, and I think you will find if you figure up the expenses of the board that it costs about \$15 to \$18 a day to go off and stay all day, and he would come back drunk and no fish. No man can take fish spawn when he is drunk. They have done that. Robinson has come back so drunk that the horse has stopped in the snow and he fell out of the sleigh, and the horse would run off. The ditches, I do not know how much they cost. I could not pretend to tell.

Q. That does not matter; we do not care about that.—A. I thought you wanted to get at the general management of affairs.

Q. Have you ever reported what you know about the management there to Mr. McDonald?—A. No, sir. And for this reason: Senator Teller is my personal friend, and I wanted to go back to Colorado, and when I came here it was through Senator Teller. He went to see Mr. McDonald to give me this position, and I said nothing about it; it was on Senator Teller's account.

Q. You have not reported it to anybody?—A. I went to the office the other day to see Colonel McDonald and the chief said, "How are you getting along out there taking spawn?" And I said, "If getting drunk and breaking up wagons and talking secession is taking up spawn, then they are doing first rate."

Q. Do you know any thing about the management of affairs at this Central Station?—A. I do not.

TESTIMONY OF EDWARD FITZGERALD.

EDWARD FITZGERALD, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Are you in the employ of the Fish Commission, sir?—A. No, sir; I am not.

Q. Where is your residence?—A. Nine hundred and thirty-seven Maryland avenue southwest.

Q. Have you ever been in the employ of the Commission?—A. Yes, sir.

Q. When did you leave it?—A. I left here, I think, about the 20th of May.

Q. This year?—A. Yes, sir.

Q. How long were you in the service?—A. Well, I have been off

and on there for the last five years. I never have been in steady employment; always extra.

Q. What were your duties; what position did you fill?—A. Well, I was on the pay-roll as assistant in the hatchery.

Q. At the Central Station?—A. Yes, sir.

Q. Do you know of relatives of Commissioner McDonald's family being employed at the station or by the Commission?—A. I think there is one who is a relative; that is all I know of.

Q. What is his name?—A. In fact, I could not call his name.

Q. Is it Lewis?—A. No, sir.

Q. Is it McCormick?—A. I think that is the name; I am not certain; I know him just by seeing him going up and down. They said he was Colonel McDonald's nephew.

Q. Is he the only one that you have heard spoken of?—A. Yes, sir, that is the only one.

Q. You do not know of your own knowledge whether he is the only one or not?—A. No, I do not know, only by what I have heard him say that he is a nephew. He is the only one that I know of.

Q. It has been charged in some newspaper articles, which you may have seen, that the management of affairs at the station was very loose; that the employes were not held to rules; that they came late and went early, and did, in a general way, about as they pleased. What can you state upon that point? How was it in your own case?—A. In my own case I was all right; I was prompt enough.

Q. You were on hand on time?—A. And I worked overtime an hour and a half in the evening sometimes.

Q. How was it with those who worked with you?—A. They did the same.

Q. Have you ever been down at the Fort Washington hatchery when they were taking out fish?—A. Yes, sir; I was there this summer two years ago in the hatchery there. I worked down there.

Q. Do you know as to whether any officer in charge or anybody under him kept liquors there which they sold to employes and to outsiders who might come along there?—A. No, sir; not during the two months I was there.

Q. Was liquor used there?—A. No, sir.

Q. Not to your knowledge?—A. No, sir.

Q. Do you know what they do with the fish that are taken in the seine? They take them for the spawn; what do they do with the fish?—A. Ship them to the market and sell them.

Q. Do you know what is done with the money received for the fish?—A. No, sir; I do not know as to that.

Q. That was outside of your duties there?—A. Yes, sir.

Q. Have you read some articles in the newspapers attacking the management of the Commission?—A. Yes, sir; I have read some of them. I have seen them in the papers—in the Star and Post both, I believe.

Q. Do you know anything about the truth of those statements?

The WITNESS. About the drinking and all?

The CHAIRMAN. About drinking and the general management. It is charged that there was drinking at Fort Washington, and it is charged that the Commissioner employed relatives. You have already said that you only knew of one employe who was a relative. It is charged that the management is loose and everybody did as they were a mind to there.

A. No, sir.

Q. You do not think those charges are true as far as you know?—
A. No, sir; not as far as I know.

Q. What we want to get at is as to the general management of Colonel McDonald of the Fish Commission. If you know anything which you consider important, bearing upon that, will you please state it in your own way?—A. No, sir; I do not know anything about that at all.

Q. In your judgment the affairs were managed properly, and the fish properly taken care of and managed well?—A. Yes, sir.

TESTIMONY OF EDWARD D. ROGERS.

EDWARD D. ROGERS, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Are you in the employ of the Fish Commission?—A. Yes, sir.

Q. How long have you been in the employ of the Fish Commission?—
A. This is my fifth year.

Q. You were appointed under Professor Baird, then?—A. Yes, sir.

Q. Have you seen some articles, the first of which was published the 25th of May in the New York Press, attacking Colonel McDonald's management of the Commission?—A. Yes, sir; I have seen some of the articles in the papers.

Q. Do you know of any relatives of Commissioner McDonald or his wife's, or family connections who are employed in the Commission?—
A. Well, my knowledge of the McDonald genealogy is limited. From hearsay I do know; yes, sir.

Q. Give the names, please.—A. Two men, now absent; one was a Lewis and the other a Green. The first names I do not know; and Mr. Con. Lewis, and Mr. McCormick, and Mr. R. L. Lewis.

Q. Two Lewises?—A. Two Lewises, two others who are not there, who have left the Commission.

Q. Who are not in the employ of the Commission?—A. No, sir.

Q. It has been charged in these papers that at this Central Station there was a great lack of discipline and enforcement of rules; that employes did not come promptly, and that they were in the habit of leaving very early—in fact going and coming without much regard to the rules. What do you know upon that subject?—A. As to myself, I always make application, and it is charged up to me out of my time. I am there at 9 o'clock and leave at 4 o'clock. What other men do I do not know; it is not my business.

Q. Have you ever visited the Fort Washington shad station?—A. I never was there but once.

Q. Do you know of the officer in charge or anybody under him at that station keeping liquor which was sold to employes or to visitors who came there?—A. I know nothing about it—nothing whatever.

Q. The charges against the Commissioner in these newspaper articles are the employment of a large number of employes and that in the administration of the office there is great favoritism, that pets and favorites of his can do as they please, while others are held up to the rules, and that the general management is loose and lax. Do you know anything about that, and what is your information as to that?—A. Well, I do not know, sir. He may have his pets. The pay-roll would show that better than I can tell.

Q. You do not know about that?—A. No, sir; I could not say that

Colonel McDonald has any pets whatever, not to my knowledge; I am sure I am not one if he has.

Q. Have you any knowledge of the distributing cars that go out?—

A. No, sir; that is outside of my jurisdiction entirely. I am employed in making illustrations for the different publications of the Fish Commission and doing mechanical drawing and miscellaneous drawing.

Q. If you have read the articles, I will ask you, in a general way, in your own manner, to give us any information which you can touching these charges made in some of these various newspaper articles.

The WITNESS. I am to say what I know?

The CHAIRMAN. Yes, sir.

A. Well, to say what I know, I can only say as to that which comes under me and touches me individually. Hearsay, of course, I can not testify to.

Q. You can give us no further information than you already have?—

A. No, sir.

At 12 o'clock m. the subcommittee adjourned until to-morrow at 12 o'clock m.

WASHINGTON, D. C., *June 19, 1890.*

The subcommittee met at 12 o'clock m. pursuant to adjournment.

Present: Senator Stockbridge (chairman).

TESTIMONY OF WILLIAM MAXWELL WOOD.

WILLIAM MAXWELL WOOD, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Where is your residence?—A. Boston, Mass.

Q. You are in the Navy?—A. Yes, sir.

Q. Have you ever been connected with the United States Fish Commission?—A. Yes; I was on duty with the Fish Commission for about three years and nine months.

Q. How long ago?—A. I terminated my service—it is so long I have to think up a little bit—the winter of 1884-'85. If I am not mistaken, it was the 1st of January, 1885.

Q. Professor Baird was then at the head of the Commission?—A. Yes, sir.

Q. In what capacity were you connected with the Commission?—A. I commanded first a little vessel called the *Lookout* for about a year, and then afterwards the *Fishhawk* for two years and nine months.

Q. In what service was the *Fishhawk* employed?—A. Both vessels were employed in the hatching of fish in the proper season and in experimental work in the summer time, dredging and trolling the coast, and in the winter time at Havre de Grace, the crew helping to put up buildings, etc.

Q. You have not been connected with the Fish Commission since Colonel McDonald was made Commissioner?—A. No, sir. I was out of the country when Professor Baird died, and know very little about what happened after I left it. I have been on a three years' cruise since I left it.

Q. This committee was appointed rather in consequence of the publication of a series of articles in the newspapers attacking the manage-

ment of the Commission, and more especially and particularly Mr. McDonald's management as Commissioner. Have you happened to see any of these articles?—A. I have not seen any of them.

Q. You know nothing about the conduct of the Commission, the administration of its affairs, since you left?—A. Nothing whatever since I left. I do not think these articles could have been published in the Boston papers.

The CHAIRMAN. No, sir; they were published in the New York Press and other papers. Here is the resolution under which this committee was appointed. I will read it to you :

Resolved, That the Committee on Fisheries be, and it is hereby, instructed to make early inquiry into the administration of the affairs of the United States Fish Commissioner's Office, and especially in respect of the changes in the force, compensation paid to employees, and any alleged favoritism, or other undue administration, and report to the Senate thereon.

Have you any knowledge upon any of the points involved in the resolution?—A. Not a word, sir.

Q. You know nothing about it?—A. I know nothing whatever about it.

At 12 o'clock and 15 minutes p. m. the subcommittee adjourned to meet at the office of the Fish Commission to-morrow at 10 o'clock a. m.

WASHINGTON, D. C., *June 20, 1890.*

The subcommittee met in the office of the Fish Commission at 10 o'clock a. m., pursuant to adjournment.

Present: Senators Stockbridge (chairman) and Squire.

TESTIMONY OF E. I. ROGERS—Recalled.

E. I. ROGERS, being recalled, testified as follows:

By the CHAIRMAN:

Q. When you were before us I failed to find some questions which had been left with us that we were requested to ask you, and I therefore recalled you to ask you these questions. Will you please state the date of your appointment in the Commission?—A. My appointment was in March, 1886.

Q. That was under Professor Baird's administration?—A. Yes, sir.

Q. What were your duties then?—A. Car work then.

Q. Distributing?—A. Yes, sir.

Q. Are they the same now?—A. No, sir.

Q. What are your present duties?—A. I am a mechanical and free-hand draughtsman. My work is here to show for itself.

Q. What was your salary at the time of your appointment?—A. Forty-five dollars.

Q. What is it now?—A. Seventy-five dollars, sir.

Q. Have you ever made plans for the McDonald fishway other than those for the Great Falls, Maryland, work?—A. I have made illustrations for the report.

Q. For the published report?—A. Yes, sir; I have done no private work upon Colonel McDonald's fishway.

Q. Have you ever worked upon plans or draftings for the McDonald filter during office hours?—A. Yes, sir.

Q. How much time do you suppose you have thus spent?—A. I do not know, sir; it was the first one that was gotten up. Mr. Gorham drew the first plans and I drew the second; that has been some years back, and I could not say, sir.

Q. That is the filter which is now in use here?—A. Well, this is the evolution from that; yes, sir.

Q. Have you ever been promised promotions which were never realized?—A. About three years ago; yes, sir.

Q. What promotion were you promised?—A. I was not promised any specific amount.

Q. Were you promised a promotion to a different position?—A. I was promised a promotion in keeping with the work I did. I came into the Commission on car work to get into the Commission, and having a pretty fair education I am adapted to better work than car work.

Q. Do you know Miss J. M. Palmer?—A. Yes, sir.

Q. In what department does she work?—A. She has been in so many I could not tell you now. I think she is in Mr. Scudder's room.

Q. She does clerical work?—A. I do not know; I think she attends to the newspaper clippings, something like that.

Q. Do you know her salary?—A. Yes, sir; the same as mine.

Q. Do you know Miss Lillian Collins?—A. Yes, sir.

Q. What does she do?—A. I do not know; she is in the Captain's room, one of his clerks.

Q. Do you know her salary?—A. No, sir.

Q. Did you apply recently for a short leave of absence?—A. Yes, sir.

Q. Did you take it?—A. I did not, sir.

Q. Why not?—A. The reason I did not take it was because I wanted to save up my time until the fall. That is the principal reason I did not take it. I would only have been away from the office an hour and a half, or something like that, on account of the train service.

Q. Has not Miss J. M. Palmer frequently been absent during work hours?—A. That is a question I could not answer, because I do not know it of my own knowledge.

Q. Has she been charged with time so lost?—A. That I could not answer.

Q. Have you knowledge of her boasting of lobbying to effect legislation touching the Fish Commission?—A. No, sir.

Q. Can you produce any specimen of your work?—A. Yes, sir.

Q. Do you not consider that favoritism has been shown in the administration of the Fish Commission?—A. Well, individually speaking, as far as I am concerned, as I said before, I do not think I am paid as I should be; that is, in proportion to what the other men who are draughtsmen get; the pay that they get. I am way below the average, and do more work than one man who gets \$1,500 a year; that is, the variety of my work is very much in excess of his.

Q. Do you attribute that to any prejudice against you or favoritism to the other, on the part of the Commission?—A. No, sir. Colonel McDonald has generally exhibited a very friendly spirit towards me; he has always been very kind to me one way and the other; that is, outside of salary matters, sir.

By Senator SQUIRE:

Q. Have you ever made any complaints to others so that it has come to the hearing of others that you thought there was favoritism?—A. Well, I think that I have; yes, sir, as others have. If the thing is spoken of it must be two persons or more speaking of it. It is somewhat current about the office. The reason of that is this: that the man who is said to have made those complaints, or some of them, worked in the same office that I did.

Q. You talked with him?—A. Of course I talked with him; certainly, being in the same office.

Q. This is the point that the committee wanted to develop, as to whether there has been, as charged, favoritism; whether some men have been paid more than they were worth perhaps, and others have been paid less than they were worth, and not for business reasons, but for reasons of favoritism; that is the point?—A. Well, I would refer you to corroborate what I say to a witness whom you will probably call, Mr. Gorman, who is an experienced engineer.

Q. Now, we want to get what you have to say, if you have any facts, or any knowledge of this matter and are free to tell the committee. That is what we ask you here for now.—A. I have been here, this is my fifth year, and Colonel McDonald has never raised me a cent. I have been reported for a raise as being a pretty good candidate for a raise by Mr. Gorham, and last July a year ago the colonel said he would attend to it. That is the last I have heard of it. I have written him several letters, citing that other people came in here, men and women, and have been advanced beyond me.

Q. Since you came?—A. Yes, sir; long since I came.

Q. Have you any reason to think that the Commissioner did not approve of your work?—A. No, sir; the Commissioner has stated that

I was fit to fill a better position. He said so to Mr. Gorham, and my work can show for itself.

Q. What reason do you attribute that to?—A. I have no right to attribute it to anything. Colonel McDonald can answer that question himself. I do not know why it is.

Q. You say you have been raised once?—A. Major Ferguson raised me. He was the assistant under Baird.

Q. What year was that in?—A. 1887.

Q. He was under Baird?—A. He was an assistant under Baird.

Q. How much was that raise?—A. I was raised. It was \$60 when I came into the office; it was a \$15 raise.

Q. You were raised from \$60 to \$75?—A. Yes, sir.

Q. And that is the only raise you have had?—A. Yes, sir.

Q. And that is what you are getting now?—A. Yes, sir. I can bring my work here. I draw illustrations for all the bulletins and reports, and I do a great deal of work outside of common draughtsman's work. The work I am working on now is illustrations.

Q. What do you mean by "illustrations?"—A. Illustrations for the report, showing different hatching apparatuses; illustrations of the bulletin that is being gotten up by Captain Collins, showing the fish-boats of the world and the traps.

Q. Your work has always been of that general character, in-door work?—A. My work has been very miscellaneous as far as draughting goes, because every man has a special line in draughting. One is a mechanical draughtsman and another may be a free-hand draughtsman, and mine is a compilation of all of them; I can do free-hand or mechanical work either, it does not matter.

Q. You have been doing both?—A. I have been doing both, and do both now.

By the CHAIRMAN:

Q. You say you have made drawings in connection with this filter in its different stages of progress?—A. I only made one.

Q. The result of that, the evolution of it, is in use now in this building?—A. Yes, sir; it is down stairs.

Q. Do you know whether it accomplishes the object sought?—A. Well, I think it is the finest filter on the market—it is not on the market. It is the finest filter that has been invented. It is ahead of the Pasteur, and that is considered the best.

Q. You consider it a valuable appliance?—A. I consider it a very valuable one.

Q. Do you know whether the Government pays anything for the use of that filter?—A. Not a cent, as far as my knowledge goes.

Q. It is something which Mr. McDonald has worked out, invented, and perfected?—A. Yes, sir; this is merely an experiment, as far as this goes.

Q. Have you been in the habit of coming to your desk late and leaving early, before the expiration of hours?—A. No, sir; I have not.

Q. I think you said you had worked extra hours frequently?—A. Yes, sir; I have worked extra time.

Q. What is your observation as to the general observance of regular hours in the Department?—A. It is a great deal better than it was under Professor Baird.

Q. How is it now?—A. Well, as far as I know, it is very good. I am in my room on the third floor, I am directly over here, and I am not supposed to know when they come in and out.

Q. My question is whether the hours of coming and going are, so far as you know, well observed?—A. Yes, sir.

TESTIMONY OF GEORGE H. H. MOORE—Recalled.

GEORGE H. H. MOORE, being recalled, testified as follows:

By the CHAIRMAN:

Q. Give us the date of your appointment in the Fish Commission?—A. May 25, 1880.

Q. It was during Professor Baird's administration of the office?—A. Yes, sir.

Q. What were your duties then?—A. My first duties were as assistant at the hatchery that was then located at the navy-yard.

Q. What was your salary?—A. A dollar and a half a day and expenses.

Q. Do you remember what it was in 1887, three years ago?—A. I think \$100 a month.

Q. What is your present salary?—A. Eighteen hundred dollars a year.

Q. What is considered a safe number of shad fry to transport in a single can?—A. It depends upon the distance they are to go, and the condition of the fish.

Q. It would vary?—A. Yes, sir.

Q. Give the maximum and minimum.—A. Well, in my judgment, the minimum probably would be about one, if you wanted to, and the maximum probably that you could transport with safety about twenty-five thousand. That would be a pretty good number in any can.

Q. How large are those cans?—A. They hold 10 gallons.

Q. What is the average number of shad fry placed in cans for transportation this season?—A. I can not answer that question, because our tables are not made up.

Q. Could you approximate it?—A. Well, some of the shipmen's that are turned over to the messengers in twenty cans of fish they claim 1,474,000. I think that is as near as I can recollect; and I think in another case a million and a half.

Q. Fourteen or fifteen thousand to a can?—A. About 70,000 to a can.

Q. What is the usual percentage of loss in transportation?—A. Well, on very short trips our losses do not amount to 5 per cent.

By Senator SQUIRE:

Q. The implication is that there was not as many in a can as there ought to be?—A. I presume that is what they are getting at.

Q. Do you know whether any injury or damage resulted from this excessive number in the shipments at that time?—A. Well, of course, I can only answer that by the reports of the messengers who took charge of the fish from here.

Q. Do you know what they were?—A. Well, in some cases they reported the fry weak, and in some of the cases reported them put over in very good condition. I protested against the putting of so many fry in a can, because I do not think it can be done. I do not think that number can be put in a can and shipped successfully.

Q. Can you tell us why it was done?—A. Well, no, sir; I can not.

By the CHAIRMAN:

Q. Was there any lack of cans or was it so that they could as well have been put in more cans?—A. There were plenty of cans.

Q. Who gave the direction as to the number of cans?—A. The superintendent of the station here.

By Senator SQUIRE:

Q. What is his name?—A. Mr. Dana was in charge of the hatching this spring.

Q. He is the one?—A. He put them up and turned them over to one of the messengers for distribution.

By the CHAIRMAN:

Q. Do you know of any apparatus being purchased this season for a shipment of shad to Germany?—A. Only in a general way. I know there is an apparatus here that I was told was to be used for a trip to Germany.

Q. From what appropriation was the cost of this apparatus paid?—A. Well, sir, all the bills were certified to by me.

Q. That would be where?—A. In the division of distribution.

Q. Was that a proper account to which to place that amount?—A. That, I think, is a matter for the Commissioner to determine and not for me.

Q. It was for the shipment of fish to Germany?—A. Yes, sir; I presume so.

Q. What was the salary of the superintendent of the Central Station under Professor Baird?—A. I can not be positive as to that, but I think Mr. Page got \$100 a month.

Q. What is the salary of the present superintendent?—A. One thousand eight hundred dollars.

Q. From what State is he appointed?—A. North Carolina, I think, sir.

Q. About what time was Mr. Worth first employed in the Fish Commission?—A. The records of this office show that he was brought into the Commission in 1878 as a spawn-taker in North Carolina, employed for a month or two that season, and after that time was commissioner of North Carolina for a number of years. He has not been in the continuous service of the United States Commission at all.

Q. Have you seen any indication of favoritism in the administration of the Fish Commission?—A. I can not say that I have, sir.

By Senator SQUIRE:

Q. Do you know of instances where men receive salaries below what they ought to have, and other instances where salaries are excessive and beyond what they ought to have?—A. That is really a question that is pretty hard for me to answer. We do not all look at those things in the same way.

Q. Give us what you have to say about it, what you think about it. Have you expressed an opinion about it?—A. Well, I might instance one or two whom I think have been paid rather small salaries.

Q. You would not want to enter into a general criticism of the Commissioner?—A. No, sir; I would not.

Q. There are one or two; which one or two do you mean?—A. I think Mr. Rogers, for one. He is a draughtsman upstairs.

Q. Who else?—A. And Miss Lincoln, a young lady who has been in the Commission a long time.

Q. Any others?—A. No, sir; I can not think of any others at this time.

Q. Are there any who receive more than they ought to have in proportion to what the customary prices are for such services?—A. Take

employés of the Fish Commission as a whole, I think they are paid rather small salaries. I do not know that there are any of them who get salaries that are too large.

Q. You know none who hold positions in the nature of sinecures?—
A. I do not.

By the CHAIRMAN:

Q. Do you think Mr. Worth's salary is too much for the duties he performs?—A. I do not know that they are. In that connection I have only this to say, that I would sooner not answer any question about him, because, personally, I have nothing to do with him.

Q. You think you might be biased against him?—A. It is as much a personal matter as any thing else; I do not think he has been courteous to me, and I have nothing to do with him.

Q. What is the difference between your duties and his?—A. He is superintendent of this station, and it is his duty in the spring of the year to handle the work from Fort Washington in the collection of shad eggs, and my position is superintendent of distribution, I have charge of the records of distribution.

By Senator SQUIRE:

Q. Was Mr. Worth responsible for the shipment of these fish in this excessive quantity?—A. No, sir; he was not. Mr. Dana was in active charge of the hatchery.

By the CHAIRMAN:

Q. Have you seen any employés of the Fish Commission working on models of fishways or filters during office hours?—A. I have; yes, sir.

Q. Has this been going on to a considerable extent or only to a trifling extent?—A. Well, now, I will tell you what I know about that. Of course my position brings me up stairs. I am in the office, and I frequently have occasion to go down stairs, especially during our busy season, and I have seen men working on those things. I could not say how long they have worked upon them.

Q. Have they been generally at work in that way, or only exceptionally?—A. Well, I have seen it go on quite frequently.

Q. How many men have you seen working at those models or any thing relating to them?—A. I suppose I have seen three or four.

Q. Would the use of that filter be of value to the Commission?—A. The filters that have been made here, with possibly one exception, are being used—that is, those which have been perfected to filter water for the aquarium down stairs.

By the CHAIRMAN:

Q. Do you know the location of the new Colorado Station?—A. Yes, sir.

Q. Describe the location of the same as adapted to fish-culture?—A. I was there last summer and the ground had not been broken for the foundation of the building even, but I know where it is.

Q. Do you consider it a good location?—A. Well, personally I think it is too far from the railroad.

Q. How far is it from the railroad?—A. The nearest railroad station is Leadville, about 6 miles.

Q. Do you know why it was located where it is?—A. Only in a general way. I understood that the water supply was very fine.

Q. That is an important item?—A. A very important thing, sir.

Q. Have you ever visited the Gloucester, New Jersey, Station?—A. Yes, sir.

Q. Is that station on Government land?—A. I think not.

Q. Is it rented by the Government!—A. My understanding of the matter is that the building was put up by a Mr. Thompson, who is quite a prominent gentleman over there and who allows the Government to occupy the building during the shad-hatching season.

Q. Do you know what rent is paid for the use of the building?—A. I do not, sir.

Q. From whence is the water for this Gloucester Station taken?—A. It comes from the city water works, as I understand it. It is taken from a spring; it is fed by springs some little distance.

Q. Do you know the temperature of the water?—A. When I was there in the spring it was ranging from 58 to 60 and 61. I did not see it above that.

Q. What is the best temperature for shad-hatching?—A. I think the best results are obtained from water running from 68 and 70. We can hatch at a lower temperature than that, but a little higher we get a better class of fry from water of that temperature.

Q. When you were there was it so early in the season that the temperature would be lower than it would be in the season?—A. Yes, sir; the last trip that I made there the water should have been warmer than it was.

Q. What was the temperature the last time?—A. Sixty-one was the highest.

Q. And that you think is a little low for the best results?—A. We think so.

Q. Compare the condition of fry hatched there with those hatched elsewhere for shipment.—A. We did not have any for shipment at that station this season. The fry that were hatched there were so weak they would not stand transportation, and there were none of them turned over to me for shipment.

Q. To what cause do you attribute the difference in fry at that and other stations?—A. One cause, I think, was the low temperature of the water, and I think that there was something, some foreign substance, in the water; I do not know what it was. I think they sent it to Philadelphia for examination, and I never heard the result of the analysis.

Q. Cite cases of favoritism in the office.—A. Well, I do not know that I can do that.

Q. Do you know of any cases which you think would come within that inquiry; do you know of persons who have been advanced in position and salary on account of personal favoritism?—A. I do not think Colonel McDonald would advance a man simply for favoritism; I hardly think he would.

Q. Have you ever heard of Mr. Worth being intoxicated while on duty?—A. I have heard it.

Q. Do you know personally about it?—A. I do not.

Q. Has Mr. Worth ever undertaken to interfere with your division?—A. Well, I have thought so.

Q. In what way?—A. Well, in moving property from my room and in other ways.

Q. Things necessary for the conduct of your division?—A. Things belonging to my division and charged up against me on the property of this station.

Q. What were the articles?—A. Cans, etc.

Q. Do you know why he removed those articles?—A. I believe it was said by his assistant that they were to be used in moving fish from

Fort Washington here, and we had already placed at their disposal a number of cans which were in the yard at that time.

Q. Were those cans which he caused to be removed from your station better for the purpose than the others?—A. Well, yes, sir; they were better, it is true, but the others were suitable. The cans that he removed were cans that cost us \$5.50 apiece, and they were very nice cans, but I do not think it was necessary to knock them about in carrying fish from Fort Washington here.

Q. Did the business of your division suffer in consequence of their removal?—A. Oh, no, sir.

Q. Was it not once intimated to you that it would be best for you officially to drop friendly communication with certain parties?—A. Officially?

Q. I only know what is down here.—A. No, sir; the only thing in that connection was an anonymous letter that was sent to F. C. Brown, in which I figure very prominently, and a man who can not sign his name to a letter is hardly worthy of any great notice.

Q. How did you understand this remark?—A. What remark was that?

Q. Was it not intimated to you that it would be best for you officially to drop friendly communication with certain parties—and now follows this question, "How do you understand this remark?"—A. Well, I do not understand the remark at all; I do not recollect of ever having had any such thing said to me.

Q. Do you know Miss Nellie B. Barry?—A. Yes, sir.

Q. In what department is she employed?—A. In my office.

Q. Upon whose recommendation was she appointed?—A. I made the request for a clerk covering a period of five months, and in compliance with that recommendation she was appointed.

Q. Was she not appointed to consume an unexpended balance?—A. No, sir.

Q. Is she appointed for any stated time?—A. Five months.

Q. Has she relatives in the Commission?—A. Yes, sir.

Q. Who are those relatives?—A. Mr. O'Connor, her brother, is the only one I know, sir; one.

Q. What position does he occupy?—A. Chief clerk.

Q. Were you in charge of a trip to the western coast?—A. No, sir; I was simply in charge of a car.

Q. Who composed the party?—A. The Commissioner, Colonel McDonald, Capt. J. W. Collins, J. J. O'Connor, E. C. Bryan, Angus McDonald, and the cook, Edward Quivus, and myself.

Q. You speak of being in charge of a car; it was a Fish Commission car?—A. Yes, sir.

Q. Such as you used for the distribution of fish?—A. Yes, sir.

Q. It was all arranged for you to live upon the car?—A. Yes, sir.

Q. Were there any upon this trip who were not employés of the Commission?—A. Yes, sir.

Q. Who were they?—A. Colonel McDonald's son.

Q. How old a man is he?—A. I guess he is about seventeen or eighteen.

Q. What is your opinion of Mr. John Gay as an expert fish culturist?—A. I never considered him an expert fish culturist at all.

Q. What are his special qualifications as a fish culturist?—A. I do not think he possesses any.

Q. About what was the cost of the change he had made in the plans of the Put-In-Bay Station?—A. That I do not know.

Q. It consisted of some rock excavation in order to lower the building?—A. Yes, sir.

Q. Was Angus McDonald one of this party that went to the Pacific coast?—A. Yes, sir.

Q. Is he now, or was he at that time, an employé of the Government?—A. No, sir.

Q. Do you know of any trip or trips to the Pacific slope made by the Fish Commission car, with any correspondents of newspapers on board?—A. No, sir, except one. There was a trip made to Oregon, I think, in the Winter of 1888, and there was a correspondent of the Washington Star, Mr. Loop. But it was not at any expense of the Government other than his living expenses. He received no salary. He simply went on as I understood it to write up the methods of the Commission and enlighten the public as to the methods of doing certain work. His article has not appeared yet.

Q. Do you know whether Mr. F. E. Loop, of the New York Evening Post ever took a trip upon a Fish Commission car?—A. He may have been a correspondent of the Post also. Loop is the man I spoke of.

Q. Has there ever been a charge to your Department of expenditures for service of outfit, that in your opinion belonged to other Departments?—A. Well, I suppose you might take that German expense in, if you include that.

Q. That expense was charged to the account of distribution of fish?—A. Yes, sir.

Q. To what other department would you have had it charged?—A. I do not know of any other that it should have been charged up to, it was all distribution.

Q. So that would not be in your opinion an improper fund to make the charge to?—A. No, sir; that should come in there.

Q. Did you make an office requisition for the service of Miss Nellie B. Barry?—A. Yes, sir.

Q. At whose suggestion was such requisition made?—A. I made the requisition myself.

Q. You wanted the additional service?—A. I wanted a clerk.

Q. What is the number of cars used in the work of distribution?—A. Three.

Q. What was the number of cars in 1887?—A. Three.

Q. The same number?—A. Yes, sir.

Q. What was the number of men employed as crews on those cars?—A. Five on each car.

Q. How does this compare with crews under Professor Baird?—A. The same number.

Q. Do you know who located this station of Gloucester?—A. It was located, I think, there at the recommendation of Mr. Gay, who was in charge of that.

Q. When was it established?—A. Last spring.

Q. About what expense was it to fit it up?—A. I could not say.

Q. Have you ever had official dealings with Mr. John G. Worth?—A. Yes, sir.

Q. State the character of such relations?—A. I have had occasion to take orders to him to send fish to different parts, and arrange with him also for shipments of fish by our cars, etc.

Q. Do you know any reason why he should try to interfere with your work?—A. I do not, sir.

TESTIMONY OF S. P. BARTLETT.

S. P. BARTLETT, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Are you connected with the Fish Commission?—A. I am, sir.

Q. In what capacity?—A. I have charge of the distribution of indigenous fish west of the Alleghanies.

Q. How long have you been in the employ of the commission?—A. I have been on the pay-roll about a year—not quite a year. It will be a year in July. I have been connected with their work for two or three years as assistant simply.

Q. What State are you from?—A. Illinois.

Q. What is your compensation?—A. My compensation is \$1,800 a year.

Q. Does that cover your subsistence when you are out on duty?—A. I presume that my expenses are allowed for—absolute traveling expenses only.

Q. How do you manage about living; do you live upon the cars?—A. No, sir; my headquarters are at Quincy, Ill., where I belong.

Q. I understand you to say that you were in charge of distribution?—A. Yes, sir; this business is divided up into a number of branches, the indigenous fishes and the native fishes of Illinois, and if you will allow me I will explain about that. A number of years ago it was demonstrated that along the Illinois and Mississippi Rivers there were lost annually millions of fish, the water rising in the Spring and overflowing the bottom lands and receding again, and during the overflow the fish would go into the low places, as they do naturally and deposit their spawn, and as the water recedes the old fish go back leaving the spawn there to become fish, and as the water recedes those fishes are left to perish and are not taken care of, thousands and millions in Illinois alone; and in our work we commence taking those fish and utilizing them and using them for purposes of replanting in streams without our own State, and we got them by the hundreds and thousands by simply the use of the seine.

Q. What kind of fish?—A. Bass, wall-eyed pike. Those fish are taken with a small net and put into boxes, and these cars are utilized to distribute them all over the States throughout the West in public waters. We worked on that plan for a number of years, and the attention of the U. S. Fish Commission was drawn to the work.

Q. You mean the people of the State of Illinois?—A. Yes, sir; the Illinois Fish Commission; and then Colonel McDonald's attention was drawn to the work and he took it up about three years ago and for the last year I have had charge of the work.

Q. Do you consider it a valuable work?—A. Yes, sir; I do; but that would be hardly a fair question to ask me, an enthusiast upon that work, I regard it as one of the most valuable works.

Q. You say you have utilized a vast number of fish?—A. Yes sir, the fish can be taken in fries at a very nominal cost.

By Senator SQUIRE:

Q. How long does it take for the fish to be regarded as mature?—A. It varies with different fish. Take a black bass at the age of three years and it will re-produce again.

Q. How long is it in the case of a salmon?—A. Perhaps the same. Both salmon and bass grow very large in a shorter length of time than people ordinarily suppose. A black bass three years of age will weigh

three and a half pounds, and I have known of instances where they would be placed in ponds that length of time, ponds perfectly free before that, and afterwards from the breaking up of the dam or drying up, or something of that kind, they were taken out and proved to be well filled with fish of that kind.

By the CHAIRMAN :

Q. Was a part of your time spent here?—A. Only when I am here to arrange for the season's work.

Q. Do you know anything about the management of this central office; that is, do you know anything as to the hours they work; as to their regularity in coming and going?—A. I will say in explanation of that, that during the year—twice a year any way—I am here two or three weeks at a time, and always in the office, and I think I can answer that question as far as that time is concerned.

Q. Give us your observation?—A. I do not know as much about the Government departments, perhaps, as I do about the State departments. I do not know that I ever knew of a department where there seemed to be the same regularity of men going and coming that they have here.

Q. You were appointed to your present position by Colonel McDonald?—A. Yes, sir.

Q. It has been charged in newspaper articles, which caused this inquiry, that there was favoritism; that the Commissioner had his favorites, who were advanced in position and pay because they were favorites. Do you know anything of that sort?—A. My relations with Colonel McDonald have been very intimate for a number of years in this work, both before and after. I have never yet heard Colonel McDonald express a single word in favor of any man as far as favoritism is concerned. The only question is whether a man is qualified for the position.

Q. Do you know Mr. Gay, who is in charge of the Put-in-Bay Station?—A. Yes, sir; I know Mr. Gay, not at Put-in-Bay Station. I know Mr. Gay as the inspector of the stations.

Q. Do you consider him an expert fish-culturist?—A. As far as I know him; yes, sir. I am not intimately acquainted enough with his work to answer that definitely. As far as I know the man and from my conversation with him, I judge him to be an expert fish-man, as far as I am capable of judging.

Q. There have been newspaper charges against Colonel McDonald's general management, and charges that he employed a large number of relatives of his family here, that the general administration of the office here was loose, and people came and went about as they pleased (which was covered by your former answer), a general criticism as to the management of the affairs of the commission. Now, if you know anything about that or have anything to say about that, please state it in your own way.—A. As I before stated, my relations with Colonel McDonald are very intimate, both of us being enthusiasts upon the fish question, and I have had occasion to know a great deal about Colonel McDonald's appointments and his business, and I should think the contrary in almost every instance would be the case with him. I think he is very careful in his management of affairs here, I do not pretend to say but what Colonel McDonald may be mistaken about his estimate of a man the same as I would be in my judgment of a horse.

Q. You have seen nothing to indicate any favoritism?—A. No, sir; not a thing, and I do not think it ever existed.

Q. Have you seen anything that looked like extravagance of expenditures?—A. I have found the contrary to rule, personally.

Q. He scrutinizes your accounts closely?—A. Yes, sir; every account.

TESTIMONY OF EDWARD C. BRYAN.

EDWARD C. BRYAN, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Where is your residence?—A. Washington.

Q. You are in the employ of the Fish Commission?—A. I am, sir.

Q. What position do you occupy?—A. That of clerk and stenographer.

Q. For whom?—A. Captain Collins, in the division of fisheries.

Q. What does Captain Collins have charge of?—A. He has charge of the division of fisheries. That comprehends the statistics and inquiries into the methods and relations of the commercial fisheries of the United States.

Q. Particularly the marine fisheries?—A. Yes, sir; the marine and inland fisheries, both.

Q. How long have you been in the employ of the Commission?—A. I was first employed in the Fish Commission in conjunction with a position with Professor Baird, in the Smithsonian. That was in 1886, and I have been connected with its affairs, with Professor Baird, since 1879.

Q. What was your salary at the time you entered the service?—A. Twenty dollars a month.

Q. What is it now?—A. One hundred dollars a month.

Q. When was your salary increased; it was not increased all at once?—A. No, sir; gradually.

Q. What were the steps of increase?—A. From \$20 to \$25, and then \$30, and then to \$40, and then to \$65, and then to \$100.

Q. How long have you been drawing \$100 a month?—A. Since December, 1888.

Q. Was that advance in salary given you by Commissioner McDonald?—A. It was.

Q. Were your duties changed at the time your salary was advanced to \$100?—A. They were not changed at the time, but have been changed considerably.

Q. How much were you getting before this last advance?—A. Sixty-five dollars.

Q. What were your duties when you drew \$65?—A. Well, sir, they were the same; that of stenographer and clerk.

Q. Do you have more work to do since your salary has been increased than you had before?—A. Yes, sir; a great deal more. My salary was increased on account of having a great deal of work to do in connection with the Cincinnati exposition.

Q. Has your work upon the average been greater than it was before your increase?—A. Oh, yes, sir; I should say about double.

Q. Have you seen a series of newspaper articles published in the New York Press and other papers, criticising the management of the Fish Commission?—A. I have.

Q. In one of those articles, published the 25th of May—I think that was the first article—it was charged that there were a large number of relatives of Commissioner McDonald and of his wife, of the family, who

had been appointed by him in the service of the Fish Commission. Do you know about that; do you know how many relatives of the Commissioner or of his family are in the service of the Commission?—A. Well, that article caused me to look it up for my own personal information, and I discovered that there was one of the colonel's, and that is about all.

Q. What is his name?—A. Well, not a relative exactly of the colonel's, a relative of Mrs. McDonald, Mr. McCormick.

Q. Is not there a Mr. Lewis in the employ of the Commission?—A. There is a Lewis.

Q. Is not he a relative?—A. Not that I know of.

Q. I think as a matter of fact he is. You do not know of any other except McCormick?—A. No, sir; that is about all I know of.

By Senator SQUIRE:

Q. Do you mean to say that you have made an investigation?—A. No, sir; I would not say that I made a sweeping investigation. I asked the question of the gentlemen in question and they said, one of them, Mr. McCormick, he said he was a relative of Mrs. McDonald, and Mr. Lewis said he did not consider he was any connection of the colonel at all.

By the CHAIRMAN:

Q. You have not asked all the employés whether they were relatives of Colonel McDonald or not?—A. No, sir; not all of them.

Q. May there not be others?—A. Not that I know of. I have not inquired.

Q. All you know are Lewis and McCormick, and you have been able to ascertain that they were relatives of Mr. McDonald?—A. That is all I know of, sir.

Q. In talking about it in the office I have no doubt these articles have been discussed. Have you heard it claimed that there were any others?—A. No, sir.

Q. None except those two?—A. No, sir; those two, while they are considerably nearer than anybody else employed in the Commission, I do not believe there are any persons who are connections of Colonel McDonald.

Q. It is also charged in those articles that there was a good deal of favoritism here with the colonel; that the colonel had his favorites and pets, and that he favored them and advanced them and advanced their salaries; what can you say upon that point as the result of your observation here?—A. My observation has been whenever there has been an advance in one's salary it has been on account of increased duties or something that really gave some cause for it.

Q. Would you say that you do or do not think that the Commissioner exercises favoritism in that regard?—A. No, sir; I do not think there has been any favoritism shown in that direction at all, sir.

By Senator SQUIRE:

Q. Have you heard any complaints?—A. No, sir; I have not.

Q. You never heard of any complaints?—A. No, sir.

By the CHAIRMAN:

Q. Do you and the other employés, as far as your observation extends, report here promptly at the time you should be here in the morning, and do you stay until the regular hours have expired?—A. I am here at a quarter after 8 in the morning usually, and sometimes half-

past, and I usually go home about half-past 6 or 7 o'clock, and about five nights in the week I am here at 8 or half-past 8 and stay until 11.

Q. Now, tell me this—it is one of the charges in the newspapers, and I want to ask you the question in the broadest sense so as to give you an opportunity to say anything you have to say about it—as the result of your observation in the office, are the employes held to regular hours of work here?—A. Yes, sir; they are, in every sense of the word; they are strictly held to it. I do not know of any cases where they even try to shirk.

By Senator SQUIRE:

Q. They are not allowed to come late and go early?—A. No, sir.

Q. Do you know of any cases where men have gone out a half an hour or an hour before the time for quitting had arrived, and staying out during the day?—A. I could not say that I have noticed anything of that kind; I have not asked persons what they were doing, but no person in the office where I am has done it.

Q. Would you know, in all cases, whether parties did or did not do it?—A. Not in all cases; I could not say.

Q. Did you go upon a trip West sometime in the service of the Commission?—A. Yes, sir.

Q. Where did you go?—A. I went as far as Leadville, Colo.

Q. What were your duties upon that expedition?—A. Upon that expedition I kept the journal of the journey and wrote letters—official letters, and things.

Q. Connected with the business of the Commission?—A. Yes, sir.

Q. Did you return before the others?—A. Yes, sir; we returned before Colonel McDonald and the other people. Captain Collins and I came east at the request of Mr. Porter at the Census Office.

Q. What did he want you to come back for?—A. He wanted the captain to take charge of the fisheries section of the Census Office.

Q. That is this census?—A. Yes, sir.

Q. How far west did you go?—A. Leadville, Colo. We got to the Leadville Station, when we decided to come back.

Q. Who is in charge of the Leadville Station, do you know?—A. I think Mr. Robinson.

Q. How long were you at the Leadville Station?—A. Well, I was there just as they were selecting the site. I was there four days, I think; four or five.

Q. Do you know anything about the personal habits of Mr. Robinson—that is, whether he is a drinking man or not?—A. No, sir; I could not say that he is. He is a very sober and upright man, as far as I know.

Q. Had you any knowledge of him before he went there?—A. Yes, sir. I was with him for a whole summer in 1885.

Q. Was he in the habit of drinking liquor?—A. No, sir.

Q. Who else was on this expedition to Leadville?—A. There was the Commissioner, Captain Collins, Mr. O'Connor, the chief clerk, and Mr. Moore and myself.

Q. And the object of the trip was to select a site?—A. That was one of the objects; yes, sir.

TESTIMONY OF F. L. DONNELLY.

F. L. DONNELLY, being duly sworn and examined, testified as follows :

By Senator SQUIRE :

Q. You live in Washington ?—A. No, sir.

Q. Where do you reside ?—A. Havre de Grace, Md.

Q. Are you connected with the Fish Commission ?—A. Yes, sir.

Q. What are your duties ?—A. In charge of the records in the division of distribution.

Q. Where are those kept ?—A. Three rooms below here in this building.

Q. You do not stay in Havre de Grace ; you stay here ; your duties keep you here in Washington ?—A. No, sir ; my home is in Havre de Grace.

Q. How long have you been in the employ of the Fish Commission ?—A. I first entered the Fish Commission in May, 1880.

Q. Was that under Professor Baird's administration ?—A. Yes, sir ; May 24.

Q. What salary did you get when you first entered the service ?—A. One dollar and fifty cents a day and expenses.

Q. What are you getting now ?—A. One hundred dollars a month.

Q. How long have you been receiving \$100 a month ?—A. Since the 1st of July last year.

Q. What did you receive before that ?—A. I was in the temporary service from 1880 until 1886, when I resigned voluntarily and went to St. Paul, Minn., to go into a railroad office there—the Northern Pacific Railroad office—and I re-entered the service of the Commission as one of the traveling men in April, 1888. I first received \$1.50 a day for two years during the time I rendered service.

Q. In 1888, what did you get when you entered the service again ?—A. Seventy-five dollars a month ; when I resigned I was receiving \$90 a month

Q. When did you resign ?—A. In December, 1886.

Q. And when you re-entered in 1888 you received \$75 ?—A. Yes, sir.

Q. What were your duties then ?—A. One of the traveling messengers.

Q. This was in 1888 ?—A. Yes, sir.

Q. On the fish cars ?—A. Yes, sir.

Q. Before you received \$75 a month ?—A. Yes, sir.

Q. How long did you receive \$75 a month ?—A. Until October, I think it was October or November. The record clerk, Mr. Terrill, resigned and I was appointed to his place.

Q. What year was that ?—A. That was in 1888. I returned here in April and went on the car out West until the fall, in November, I think it was, and when Mr. Terrill resigned his position I was advanced from traveling messenger to clerk in the office.

Q. They then increased you from \$75 a month to what ?—A. To \$1,000 a year.

Q. That was in October or November of 1888 ?—A. Yes, sir.

Q. What was Mr. Terrill's salary whom you succeeded ?—A. A thousand dollars.

Q. You succeeded him as record clerk ?—A. Yes, sir.

Q. That is the same position you hold now ?—A. Yes, sir.

Q. When was your salary advanced to \$100 ?—A. Last July.

Q. In 1889 ?—A. Yes, sir ; additional work was imposed upon me.

Q. What additional work?—A. I tabulated the work of the Commission.

Q. Who had done that before?—A. The Commissioner—the one who is now Commissioner. He had charge of the fish-cultural work, and the work of propagation and distribution all came under him, and after he became Commissioner he divided up and the distribution was made separate from the propagation, and the last year the tables and the operations of the Commission and the propagation and distribution also have been made up by me. Heretofore I only made up the distribution tables.

Q. Who did this work before you did it; this additional work?—A. Well, I could not say. It was done by Mr. O'Conner. It was done by some of the colonel's subordinates when he was in charge of that work.

Q. The work was taken from somebody else and put upon you?—A. Yes, sir; there was more work assigned to me, and I am doing more work than I did a year ago.

Q. On account of the natural increase in the growth of the business of the office?—A. Yes, sir.

Q. It is not specially owing to this making-up of these tables?—A. No, sir. That was additional work to our office that does not come under our office; yet we do it.

Q. From that time on you have had \$100 a month?—A. Yes, sir.

Q. The chairman has requested me to ask you in regard to the matter of the arrangement of these fish statistics. Have you kept those statistics and tabulated them in the same manner they had been tabulated and kept before?—A. No, sir.

Q. You made a change in the method?—A. Yes, sir; and I made, I think, an improved change.

Q. What does that change consist of?—A. It shows whether they were egg, fry, or fish, and, in a more detailed form, it shows the distinction between egg, fry, or fish. The whole thing has been lumped heretofore.

Q. It shows the fry distinct from the fish?—A. Yes, sir, from the grown fish and the egg.

By the CHAIRMAN:

Q. Do you think that the present system gives more correct information as to the operation?—A. Most assuredly so, in a more detailed form.

Q. Gives it more accurately?—A. Yes, sir; it is more accurate, and I am very careful in tabulating the work of the Commission.

Q. Do you think the statistics as they are managed now and kept show the actual results?

The WITNESS. Do you mean relating to the division of distribution? I do not know anything about the statistics in the other part of the Commission.

The CHAIRMAN. Anything that you have the handling of.

A. Yes, sir; I am careful in making up those statements. We have a system at the station requiring the superintendents of the stations to send in a shipping notice.

Q. It has been charged that there has been such a manipulation of fish statistics as to show greater results than are warranted.—A. That is not correct. They are all station reports. They all verify, and we are careful to check them before entering them; before we tabulate the work.

Q. Now, as I understand you, you say that the statistics have been accurately kept?—A. Regarding the distribution.

Q. So as to show actual results?—A. I do say so, regarding the distribution of fish.

Q. That is all you know about?—A. Yes, sir.

Q. Do you know anything about any favoritism in the office?—A. No, sir; I do not.

By the CHAIRMAN:

Q. In these newspaper articles it is charged that quite a long list of relatives of the Commissioner were appointed here. Do you know whether there were any, and, if so, how many relatives of Colonel McDonald or his wife hold positions here?—A. No, sir; I do not know anything about that.

Q. Do you know Mr. McCormick?—A. I know Mr. McCormick; yes, sir.

Q. Do you know whether he is a relative of the Commissioner?—A. Only from hearsay. I do not know myself.

Q. He is said to be?—A. I have read it in the papers. I do not know any thing about it.

Q. It is also charged that the employés here at this station do not come promptly in the morning and that they leave early in the afternoon, and that there is laxity in that regard. What is your observation in regard to that?—A. I do not think that is correct, especially in regard to our office. We are there before hours and after hours, and we have to do it.

Q. Do you absent yourself?—A. I have not had a day's leave in the last year.

Q. I mean during the day?—A. No, sir.

Q. Do you know of any instances where men leave their work at three o'clock or half-past three?—A. Only upon Saturdays. They close at three o'clock in the summer time.

TESTIMONY OF FRANCIS P. FENNEL.

FRANCIS P. FENNEL, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. You live in Washington?—A. Yes, sir.

Q. Are you in the employ of the Commission?—A. Yes, sir.

Q. How long have you been in that employ?—A. Since January, 5, 1886.

Q. Who were you appointed by?—A. By Professor Baird.

Q. What was your position at the time of the appointment?—A. Clerk in the office.

Q. At what salary?—A. At \$50 a month.

Q. What is your position now?—A. I am clerk in the chief clerk's office.

Q. What is your present salary?—A. One hundred dollars a month.

By Senator SQUIRE:

Q. How long has it been \$100 a month?—A. For about two years; July, two years ago.

Q. Did you receive that advance in your salary prior to the coming in of Mr. McDonald as Commissioner or afterwards?—A. Afterwards.

Q. After he became Commissioner?—A. Yes, sir.

Q. Have your duties been changed any?—A. Well, they have been increased, but the same clerical duties.

Q. Only you have more to do?—A. Yes, sir.

By the CHAIRMAN:

Q. There has been quite a large increase in the amount of work you have to do?—A. Yes, sir.

Q. The salary is double; is the work double?—A. Yes, sir. I would like to say in that connection that the present Commissioner had three times before recommended that I be increased prior to his coming in.

Q. So after he got in office he himself increased it?—A. Yes, sir. He knew my duties and knew what they were, and that I deserved the increase.

Q. How many hours a day do you work?—A. From 9 to 4.

By Senator SQUIRE:

Q. Do you spend much time outside during the day?—A. No, sir.

Q. You are here every morning at 9?—A. Yes, sir.

Q. And go away every afternoon at 4?—A. Yes, sir; very frequently I am kept after 4.

Q. You never go away earlier than 4?—A. No, sir; very seldom; never.

Q. Do you absent yourself during the day?—A. No, sir.

Q. Without leave?—A. No, sir.

Q. Do you often get leave to be absent?—A. No, sir; I have strict orders in going out to lunch to be sure that I am relieved before I go.

Q. How long ago did you get those orders?—A. Since we came to this building.

Q. How long ago was that?—A. I think that is since July last.

Q. Was it a long time ago or since this investigation commenced?—A. No, sir; it was a long time ago.

By the CHAIRMAN:

Q. Do you know whether there are any relatives of Commissioner McDonald or his wife in the employ of the Commission here?—A. I do not; no, sir.

Q. Do you know Mr. McCormick?—A. Yes, sir; I do not know that he has any relations here; I have been told that Mr. McCormick was a relative.

Q. The two Lewis's, do you know them?—A. Yes, sir; I know them.

Q. It is said that they are relatives of the Commissioner?—A. No, sir.

Q. It is so charged, as a matter of fact, in the newspapers?—A. No sir; I never heard it said, except in the papers, that they are relatives

By Senator SQUIRE:

Q. You are well satisfied with your salary, I suppose?—A. Yes, sir.

Q. You have no complaint to make?—A. No, sir.

Q. Did you ever hear any complaints made by the others?—A. Not that I know of; I believe a draughtsman up stairs has complained.

Q. What is his name?—A. Rogers.

Q. He thinks his pay is small?—A. Yes, sir.

Q. You never heard of any others making complaints?—A. No, sir.

Q. Have you heard any complaints of favoritism?—A. No, sir.

By the CHAIRMAN:

Q. Do you think, from your observation, that the Commissioner has

some favorites whom he favors as against others?—A. No, indeed, sir; I think he is the embodiment of justice in that respect.

Q. He holds you all up to your duty?—A. Yes, sir. We all have to do our duty.

Q. No one has ever intimated that you received more than you ought to when you received your raise?—A. No, sir. On the contrary they told me that I had deserved it, since it had been recommended several times before.

Q. What is the nature of your clerical work?—A. I am a type-writer and a short-hand writer.

Q. You are a correspondent?—A. Yes, sir; just a correspondent.

Q. I will put this general question: Have you read these articles that have been published attacking the management of the Commission?—A. Yes, sir.

Q. In those it is charged that there is general laxity and favoritism and loose management?—A. Yes, sir.

Q. What can you say upon that point, generally, in your own way? If you know any thing touching that point please state it?—A. Well, sir, all I can say is that, as far as my observation goes, it is entirely false.

Q. I simply want to be able to say that I had given you the greatest latitude to state any thing that you desire?—A. Yes, sir; you have done so.

TESTIMONY OF JOHN GAY.

JOHN GAY, being duly sworn and examined, testified as follows:

By Senator SQUIRE:

Q. Where is your residence?—A. Washington; I am in the field a good deal.

Q. Are you connected with the Fish Commission?—A. Yes, sir; I am inspector of stations.

Q. How long have you been in the employ of the Commission?—A. It will be two years on the 1st of July next.

Q. Have you been inspector of stations all that time?—A. Yes, sir.

Q. You have charge of no other branch of the business?—A. Well, my duties have been varied. For example, the monthly reports made by superintendents are referred to me, and a record kept by me of them, and then I have had special duties in the field. For example, I made an investigation and located the Colorado Station.

Q. By special instruction?—A. Yes, sir.

Q. Your general duties would not imply the authority to locate stations?—A. I do not know that they would or would not. I think it would come within the scope of my duty.

Q. You are superintendent of stations which are in operation?—A. I am not exactly superintendent, but all the reports come to me; they are referred to me, and I keep a record of them and look over the work that is done.

Q. You do what you do upon instructions from the Commissioner?—A. Yes, sir; I receive my orders from the Commissioner and carry them out to the best of my ability.

Q. You had to do with the establishment of the station at Put-in Bay?—A. I had; I instigated that movement.

Q. Do you mean the investigation with reference to having one there at all?—A. When I was in charge of the whitefish work in the fall of 1888, I saw the importance of the U. S. Fish Commission hav-

ing a station on Lake Erie, because it is probably the best place to secure whitefish eggs. The spawning-ground about the islands are the very best I know of. We were then operating a hatchery at Sandusky, Ohio, a whitefish hatchery, by special arrangement, and I instigated the movement while there upon the lake. I came back to Washington and submitted the matter to Colonel McDonald and he approved of it.

Q. You regard yourself as an expert fish-culturist?—A. Well, I have been engaged in fish matters for twenty years. I was president of the Pennsylvania fish commission for nearly four years, and I might say I had full charge there, because I had to do the work, and I think I know something about it. I do not say that I know all. I built the Pennsylvania State fish commission's whitefish hatchery in Erie; I had charge of the building of it and the equipment and all, and it has been a complete success.

Q. In regard to this matter at Put-in Bay, did you change the plans that were originally arranged for the building there and the apparatus?—A. No, sir; I had no authority to change that; I called the Commissioner's attention to defects in the arrangement of the hatchery.

Q. The building was changed under your direction?—A. No, not under my direction. It was at my suggestion.

Q. It was lowered?—A. Yes, sir; if you will allow me to explain I think I could make it clear to you.

By the CHAIRMAN :

Q. It was upon a side hill, and it was thought that the excavation was not sufficient, that there was too much of an elevation to get the fish up, etc., and it was thought better to lower it. Is that the case?—A. The change that I made was, I think, there was a drop from the floor of the building to the pier leading out into the lake of about 3 feet, and in white-fish work there is very hard labor in handling the cans. That is a hatchery on a large scale and a great many hundred cans would be handled in a season and would involve the carrying of the cans from the boat and to the boat, and that this drop of about 3½ feet there would have to be a transfer.

Q. And it would require that much lifting?—A. Yes, sir; extra labor, unnecessary, and I called the Commissioner's attention to that, and suggested that the building be lowered sufficient to put it on a level or very nearly on a level with the pier.

By Senator SQUIRE :

Q. How much additional cost did that involve?—A. It was only some excavating, I do not know whether it cost \$400 or \$500 or not. It was well worth the money.

Q. Excavating the rock?—A. Yes, sir; it was loose rock.

Q. The Commissioner approved of your suggestion and ordered the change made?—A. Yes, sir; he agreed with me that it should be done.

Q. Who made the plans originally?—A. Mr. Blaisdell.

Q. Did Mr. Blaisdell approve of the change?—A. I do not know whether he did or not; I was at work upon the lakes at the time.

Q. You represented the matter fully to the Commissioner and he authorized the building to be lowered?—A. When I went to the lakes on my way to Duluth and Colorado I went over the ground carefully, and saw the plans and consulted with men who were practical fish culturists and adepts in white-fish works, and I saw the mistakes, and I called the attention of the Commissioner to that in a report, and I believe he instructed the changes to be made at the time. When I came back to take charge of the white-fish works in November I came down

from Sandusky, and I found the plans were practically the same as they had been originally, and after going over the ground very carefully and consulting with Mr. Douglass, the superintendent, and with Mr. Valentine Doler, they thought it was my duty, as I thought myself, to state the matter to the colonel, to the Commissioner, and I sent him a telegraph and put myself on record; I telegraphed to Colonel McDonald in these words about: If it is at all possible for him to give at least one day's attention here at Put-in-Bay to the location and arrangement of the white-fish hatchery I would most respectfully recommend that he should do so at once. That was about the substance of my telegram.

Q. Did you get an answer?—A. He answered that he would be there the next day, and that his time was limited, and he would like to return in the evening, and I arranged it with the regular Detroit boat to wait a half an hour for him and he came up for that purpose and went back in the evening.

Q. He authorized the change to be made?—A. Yes, sir.

Q. The total cost of that change was how much?—A. I could not tell you that.

Q. Do you know whether he had approved of the previous plans?—A. I think the plans were marked as approved.

Q. This was a change which you thought necessary to be made and he approved of it?—A. I did, most decidedly so, and he was the only man who could make the change.

By the CHAIRMAN:

Q. In the building of that station how was it managed? It has been charged that it was managed extravagantly; that there was an undue use of money in the construction of that building.—A. I had not charge of that work at that time; I had charge of the Colorado station; but my experience with the Commission is that it is managed very economically, generally, in all its branches.

By Senator SQUIRE:

Q. Do you know anything about this?—A. I think the utmost economy and discretion have been used in the expenditures there.

Q. Do you know in regard to the expenditures? Are you competent to testify as to whether they are economical or not, from actual knowledge, aside from any general judgment that you may have?—A. When I was on the ground and saw the character of work, I think I am competent to say whether there is extravagance or not.

Q. Were you there?—A. No, sir; I was not there during the work.

Allow me to make a statement in connection with this. I saw a note in the paper—a charge rather—that the location there had been badly managed; that is, securing it, and that additional land was required that was bought at a considerable expense. Well, now I am entirely familiar with the whole thing.

By the CHAIRMAN:

Q. It is in testimony here that the original amount of land and the additional amount was donated?—A. The land was donated by citizens of Put-in-Bay, and it came to my knowledge last fall that the fishermen had contributed the land, sufficient for all the purposes, and it did not cost a dollar, and we asked for an increase of a little strip. I hesitated to recommend that. It was merely to get up to the road. It would probably never be used, as the arrival and departure would be by water.

Q. The additional strip was procured?—A. The additional strip was procured, and it was given without any hesitation whatever.

Q. Was there any delay about the negotiations?—A. The only delay was on the part of the Attorney-General authorizing the district attorney on the lakes to act, and I carried a communication over to the Attorney General and requested that prompt action be taken.

Q. Do you know anything about the Gloucester Station?

The WITNESS. Which Gloucester?

The CHAIRMAN. New Jersey.

A. Yes, sir.

Q. Do you know anything about who owns the land which is occupied by the station?—A. It is supposed to be owned by William J. Thompson. I never saw his title, but he said it was his land.

Q. Has the Government gone on there and built a large establishment?—A. No, sir; the Government has never spent a dollar for the establishment.

Q. Who has?—A. Let me explain. Last March, I think, I was in Philadelphia, suffering from an affection of the eyes, and I was in frequent consultation with Henry C. Ford, the president of the Pennsylvania State fish commission, and I was doing much work upon the Delaware River. The United States Fish Commission and also the New Jersey commission have been interested there, and there has been some little trouble there; we did not pull together, as was desirable, and I suggested to Mr. Ford the necessity of establishing a shore station at Gloucester City. We spoke of Chester as a good point, and also of Gloucester City. Some time ago I understood William J. Thompson had offered to furnish a building for the purpose for the Commission if the Commission would establish a station there, and so, in company with Mr. Ford, I went down to Gloucester City and had an interview with Mr. Thompson in reference to this matter. We spoke of Chester as being a good point, and he then offered to put up a building at his own expense and give the use of water—the water necessary—free if the Commissioner cared to put a shore station there. He said he would do that for five years, and put it in writing, and I submitted the matter to the Commissioner and advised that the offer be accepted. It is one of the most liberal offers we have ever had.

Q. Did he propose to go to all the expense?—A. He did. He went to the expense of putting up a building. The contractor said, and his carpenters said, that his offer to put it up was \$1,800, and Mr. Thompson having a lot of material, he paid Mr. Grover \$400 for putting up the building. Mr. Thompson furnished the material and introduced the water.

Q. The Government has not expended a dollar?—A. Not a dollar for the building; the Government has put in a transfer. Two hundred and ten charts that we had there were not being used, and they were transferred to that station, and we put in the equipment, the piping, and the tank.

Q. What is the expense that the Government has been to there?—A. About \$700; \$700 or \$800, I think, would cover all the expenditures. That, under the contract with Mr. Thompson, is removable at any time.

Q. Would it be very expensive to remove it?—A. No, sir; it could be used anywhere. That station was built according to the plans and specifications of the United States Fish Commission, and it is considered a model building.

Q. What did the Government expend there, and would the expenses that have been made there be useful in case the Government desired to move the apparatus?—A. Yes, sir; they can establish a station at

the Potomac or on the Susquehanna, or any other point, and this can be transferred. It can be put anywhere on the river.

By Senator SQUIRE :

Q. What business motive had this Mr. Thompson, what inducement did he have, for doing this ?—A. He has a large fishery interest there at his place.

Q. Furnishing fish for the market ?—A. Yes, sir, and for his own use. He has a summer resort there. He has a resort about 4 miles below Philadelphia.

By the CHAIRMAN :

Q. The idea is, at the proper seasons he takes the fish and you have the spawn. Do you get spawn from him at this fishery ?—A. There are very few live fish to be found, and we get the most fish at Howell's Cove.

Q. Your object is to get the spawn ?—A. Our object is to have a station there. That is more desirable in several respects.

Q. And the object of the station is to get the spawn ?—A. Yes, sir; to fertilize it and hatch the eggs.

Q. Do you have occasion as at the other stations to dispose of the fish ?—A. There is one of the strong points in having that station there. The Pennsylvania fish commission assists in distributing, which is quite an item here.

Q. I mean the fish that are sold.—A. We have nothing to do with them.

Q. What becomes of them ?—A. Mr. Thompson sells them.

Q. Who gets the benefit of the fish ?—A. They are his fish. They are not ours. We do not do any fishing. Mr. Thompson's force does the fishing.

Q. There are fish taken in that neighborhood and it is a good neighborhood for you to get the spawn ?—A. Yes, sir; there is Thompson's near the place at the coast and Howell's Cove. They make several hauls during the day and our spawn-takers are on hand when they make their hauls and they pick up the females. The men can tell by gentle pressure whether the eggs are right or not, and by pressure they squeeze the eggs in a pan and then they fertilize them, and we compensate the fishermen for any loss they may sustain in handling the fish. We pay them \$10 a million for the eggs without having anything to do with the fish at all.

Q. How do you count them ?—A. By the jars. A jar holds 6 quarts, and there are twenty-eight thousand in a quart.

Q. You favored the location of the station there because it was a good point to get the eggs from the fishermen ?—A. I consider it one of the best points in the United States to procure shad eggs. It is one of the best points to distribute the fry to the upper waters of the Delaware River, which I consider the best shad river on the continent to-day, and the Susquehanna and the Hudson River, or any other point of water that the Commissioner may deem desirable.

Q. Did you investigate as to the qualities, that is, the temperature of the water there, as to whether it was right and desirable for fishing ?—A. Yes, sir; I made all the inquiries I could. Even the water company has not a record of the temperature of the water at all.

Q. Have this year's operations proven that the temperature of the water there is favorable for the hatching of the eggs ?—A. There has been a little difficulty in the water. I do not think it was owing to the

low temperature, because the temperature attained was 62, and very good shad have been produced at that temperature.

Q. Is it better to have it higher?—A. Yes, sir; say 65 to 67. The fish were hatched out and the percentage was just as large, if not greater, than it was on the *Fish Hawk*; it showed that the eggs were toughened a little and the fry a little weak; that is the only difficulty we experienced with it. We had a cold season, and if it should be found that the water appeared too cold we have a distance of only about 250 feet that the water could be pumped from the river direct to the station.

Q. Which would be a higher temperature?—A. Yes, sir.

Q. Were the shad which were hatched there this year strong and good, and good fish for distribution?—A. The only trouble that I saw with the ones as I tell you in this hatchery which were weak was that they were a little weak owing to the toughened condition of the eggs, and that they may have been caused from the new tank.

Q. Were the fish which were hatched there distributed?—A. We put them in Timber Creek, and heretofore the *Fish Hawk* has been depositing in the river all the fish that we produced at that station. I put them into Timber Creek, in which young shad are found every season, and it is very suitable for shad.

By Senator SQUIRE:

Q. There was some scandal charged in connection with a saloon there?—A. Mr. Thompson has a summer place, and he has drinks of all kinds to sell. I do not think it is a summer garden, but it is frequented by people of all classes. Some of the best people in Pennsylvania are there, and our station is located in the rear portion of his property, and access is had to it from the back street. We have found no objectionable characters in it at all. I was there, and I know personally. We have had the best citizens that visit the place in the hatchery, and they all approve of it.

Q. Has the business of the hatchery been interfered with or damaged in any way?—A. Not in the slightest. It has no connection with it. There was no improper person there at all.

Q. It has been charged that the Fish Commission boat could do the business there?—A. It is true that the *Fish Hawk* could do the work, but the field was being so extended that it was thought best to let the *Fish Hawk* be free to go on the work of investigation, for example, in our investigation on Long Island Sound. It is simply the growth of the Commission.

Q. The growth of the business is such that the vessel is better employed at other points?—A. Yes, sir; I think that is one of the most important shad stations that the Commission has, and it is a most generous offer on the part of Mr. Thompson.

Q. You have read the newspaper statements in regard to the mismanagement of the Fish Commission and charges in regard to looseness of management and maladministration?—A. I read one article on my way over here from Philadelphia a week ago last Wednesday in the New York Press. I saw some remarks about the Commissioner being worried and excited. I have not been reading much about it.

Q. Have you any criticisms to make of the administration?—A. I have none whatever.

By the CHAIRMAN:

Q. It has been charged in the New York Press that there are twenty or thirty relatives of the Commissioner employed in the service of the Commission. Do you know as to that?—A. I do not.

Q. Do you know Mr. McCormick?—A. Yes, sir. It is said that he is a relative of Mrs. McDonald, but I do not know that he is.

Q. Do you know two young gentlemen named Lewis?—A. Yes, sir.

Q. They are said to be connected by marriage in some way. Do you know anything about that?—A. No, sir, I do not know.

Q. Do you know of any person who is a relative, other than McCormick and the Lewises?—A. No, sir, I do not.

Q. You are here at this station often?—A. This is my headquarters. I was in the field eight months during the last fiscal year.

Q. It is charged that the regular employes in this station have a good deal of latitude as to hours, that they come late and go early, and go off during the day. What is your observation upon that charge?—

A. As far as I know I have found the employes reporting, as a rule, promptly about 9 o'clock and not leaving until 4 o'clock.

Q. Is the station out near Leadville under your supervision?—A. I located it, and it has been under my charge.

Q. You go there occasionally?—A. I was there three months last summer establishing it.

Q. Who is the man in charge there?—A. Mr. E. M. Robinson.

Q. It has been charged that Mr. Robinson drinks a great deal and is an intemperate man habitually. Have you any knowledge upon that point?—A. I think that is not correct. Mr. Robinson reported to me last fall before I left there, and I put him in charge of the station before I left to the lakes, and I think him a very competent man, and I did not see him out of the way at all in any way.

Q. You have not been informed that his habits were bad and that he frequently was intoxicated?—A. No, sir. Perhaps I heard it rumored that he had been in that condition, but I have no knowledge of it. It was very vague, you know.

Q. We had a witness before us who had been employed there in a subordinate capacity, a Mr. Bright, who was discharged from there, and he came back and charged that this man Robinson was drunk the most of the time; that he and some other man, a Mr. Lewis, were in the habit of going off to the city or town near by and coming home always drunk, and that he was a drunken character?—A. No, sir; that is not correct. From the character of work done there Mr. Robinson could not be drunk and do the work he did. He is one of the most energetic men we have.

Q. Do you know anything about this man who was discharged that we speak of?—A. I have just returned from the Capitol. I saw Senator Teller there and had a little talk about the Colorado business, and Mr. Bright was referred to and Mr. Teller turned to his secretary and said, "Has Bright paid you that money that he borrowed of you?" and he said, "He paid \$25, and owes me \$40, and he don't come to see me;" and I explained to the Senator, as I understood from the Commissioner, he was discharged for insubordination.

Q. You do not know him personally?—A. Yes, sir.

Q. Do you know anything about his habits?—A. I inquired of him when he was appointed through Senator Teller and he informed me he never tasted liquor, and I do not think he is a drinking man. I think he is a man who is fond of talking.

By Senator SQUIRE:

Q. You do not go there very often?—A. No, sir.

Q. You do not go there often enough to keep track of the habits of these men?—A. No, sir. It is a matter of hearsay, and I attach no im-

portance to a man like Bright. I suppose he would take a drink occasionally.

Q. Do you think he manages the station well?—A. I am satisfied with his management. I have kept track of him and his reports have come to me.

Q. If he was drunk half of the time he could not manage it well?—A. No, sir; I would certainly know it. I think Mr. Robinson is one of the best trout-culturists that we have, and I would trust him. He came under my notice there. I had charge of the work and he reported to me and I turned the matter over to him.

Q. Was that a good building that was built there?—A. An excellent building.

By the CHAIRMAN:

Q. This man that I speak of, Mr. Bright, charged as to the building that a large force of men was employed a long time and that it cost more than it ought to; that it was a very miserably, poorly built building.—A. I think the Commissioner can show you a photograph that he has of it here, and the general impression is that it is a first-class building and that the contractor lost money.

Q. It was built by contract?—A. Yes, sir; \$12,000; and if there was any waste of time it was not at the cost of the Commission.

Q. He said something about moving some cabins; that there was some expense about that.—A. Some charcoal burners had squatted there when it was Government land, and they were still occupying it when I left there, and there was one very good one, very fair in its character, and Mr. Robinson was fixing up the other cabins, and it never cost the Commission a dollar. I think they ought to have been burned to get rid of them.

TESTIMONY OF HERBERT A. GILL.

HERBERT A. GILL, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Where do you reside?—A. My residence is 1608 Q street northwest.

Q. Are you in the employ of the Fish Commission?—A. Yes, sir.

Q. How long have you been?—A. I have been indirectly connected with the Commission since the 1st of July, 1875. That is the first year. From about that date up to May of 1876 I was employed in connection with the Centennial exhibit, and from May I was regularly on the Commission.

Q. You were appointed by Professor Baird?—A. Yes, sir.

Q. What were your duties?—A. As disbursing agent and general auditing officer of the Commission.

Q. You are cognizant of the cost of the labor throughout the entire Commission?—A. Yes, sir.

Q. Are your duties the same now as they were when you entered the Commission?—A. No, sir. When I first entered the Commission I was simply a general clerk. I understand you to say when I first became connected with the Commission.

Q. What were your duties then?—A. As a general clerk.

Q. Now you are the auditing and disbursing officer?—A. Yes, sir;

and they were such during a large part of Professor Baird's administration.

Q. You have been continued in the same position under Mr. McDonald?—A. I have been disbursing officer since June, 1878.

Q. What is your present salary?—A. Two thousand four hundred dollars a year.

By Senator SQUIRE:

Q. I have been handed a list here which I know nothing about personally, and I will just hand it to the witness the same as it was handed to me. It is headed at the top, "Showing some of the favorites," and giving their salaries from 1887 to 1890, and the increase; and another list is headed, "Some of the late trusted employés of Professor Baird," giving their names and salaries for 1887, 1888, and 1890. I hand this to the witness and ask you what you desire to say in regard to the correctness of that list?—A. W. H. Abbott, I think, was first brought in in 1887 at \$50 a month, \$600 a year, and his present compensation is \$900 a year, and, as they say here, it was increased by Colonel McDonald upon the reorganization of the statistical work of the Commission. I think Mr. Abbott's salary was increased a year ago—a little over a year ago.

Q. Were his duties increased?—A. Yes, sir; he was sent out in the field, and much closer work. Mr. Addison is a clerk in my office. He is my principal clerk; examines the accounts, prepares the pay-rolls. He is kept extremely busy, and his increase has simply been due to merit and attention to work. A. B. Alexander was first employed—

Q. You had better state whether these increases as noted here and these changes are correct?—A. I can say approximately; I would not give a positive answer, unless I am permitted to examine my books. Mr. Alexander was employed at one time, I think in 1887, as a ship's writer on the schooner *Grampus*, and he was ordered as a fishery expert to go on the Pacific coast in connection with the operations of the steamer *Albatross*, and I believe he has been extremely useful in his work in the investigation of the fishing-grounds on the western coast. C. G. Atkins is now superintendent, and has been for a number of years, in fact since 1872, of the work of the Commission in the State of Maine, and I think it was in 1872 that he was first employed at a nominal salary for a part of that year, and later on, since about 1873 or 1874, or 1874 or 1875 rather, he has been regularly employed at a salary the same as that which he is receiving now, although his duties have been increased. In 1886 and 1887, prior to Professor Baird's death, the station at Wood's Holl was without a superintendent and Professor Baird was unable to decide definitely whom to appoint, and he brought Mr. Atkins to Wood's Holl, where he was subjected to extra expense, and already having his house in Maine, and being a married man, he increased the salary \$50 a month, which brought it up for this period to \$2,400 a year, but when he was ordered back to Maine and released of his duties at Wood's Holl, his salary went back to the old rate. So it is no cut, other than that the cut in compensation was commensurate with the cut in duties. The regular salary was \$1,800.

The next is Patrick Barry. He is a laborer. He was first employed at Wood's Holl and is now at Wood's Holl at \$40 per month. He has been, as I understand, a faithful man, and his salary was increased \$5 a month; in other words, from about \$1.33 a day to \$1.50 a day, and

then after some five years of continuous service. Dr. Bean's salary in 1887 was \$2,000. He has been increased since the 1st of July to \$2,400. The increase stated here is correct.

W. H. Brittain is a young man about nineteen or twenty years old. He was first brought into the Commission simply as a mail messenger, going early in the morning to the post-office for the mail and taking it to Professor Baird's house; in the evening he took it from the house to the post-office. Professor Baird worked a great deal at night at his home, where he examined and signed the letters written during the day. Brittain was afterwards given a permanent position at \$20 a month, and his pay has since been increased to \$35 a month. During a part of the present year, about a month and half, he was employed in connection with the shad work at Fort Washington, carrying the fish eggs therefrom to Central Station for hatching. To do this he was relieved from duty in the office. Living in the northwest part of the city and being required to go to the steamer Corcoran, a long distance from his home, which necessitated the use of the street cars to cover this expense, as also that of his dinners at Fort Washington, his pay was increased.

Q. How much was the increase?—A. Temporarily \$10 a month, and he is now back, since that special work ceased, to his old pay of \$35 a month.

George E. Butler was first employed at \$35 a month, for but a part of his time only. He was also employed by Professor Baird personally as a house servant. After Professor Baird's death his whole time was given to the Commission, though he slept at Mrs. Baird's house as a guard. When the offices were reorganized it became necessary to have messengers and janitors, and a uniform salary of \$50 was made, and that included the messenger service, the cleaning of the offices, windows, and things of that kind. He is getting that salary now, as are the other office messengers.

J. W. Collins came on the Commission first in 1879. His first duty, I think, was in connection with the fishery exhibition at London, and his salary was paid from that appropriation, from a specific appropriation. On the termination of that work he entered the service of the Commission at a salary of \$3 a day, engaged mainly, I believe, in the preparation of statistics and a sort of a fishery expert. He was employed in designing the schooner *Grampus*, and on the completion of that work he was placed in command, I think, at the rate of \$125 a month, and afterwards increased duties were given him. He is a man who has given a great deal of attention to fisheries and is well known among the fishermen. He has taken up with a good deal of literary work. He is above the ordinary man in fish work, and his salary was increased by Professor Baird, and when Mr. Earle, who was in charge of the statistical work, resigned from the Commission in order that he might enter the National Museum, Captain Collins was put in charge of the division of fisheries, to which the work of statistics, etc., belongs, at a compensation of \$2,400 a year. On the 1st of July last the compensation of the two chiefs of divisions, of fisheries and scientific inquiry, was raised to \$2,700, or \$225 a month.

Q. That is, a raise from \$1,800 to \$2,700?—A. Yes, sir.

Senator SQUIRE. Suppose you look over this list, and in the first place see whether it is correct substantially. You are handed a list purporting to be the employés of the Commission, showing their sal-

aries during certain years commencing in 1887 and ending in 1890, and showing an increase in some places of salary, and showing a decrease in others. You are asked to state whether or not that list is correct, and asked to compare the statement that I hand you with your books and ascertain whether the statement is correct, and you will be prepared to answer the committee.

At 2 o'clock p. m. the subcommittee adjourned to meet at the office of the Fish Commission to-morrow at 11 o'clock a. m.

OFFICE OF THE FISH COMMISSION,
Washington, D. C., June 21, 1890.

The subcommittee met at 11 o'clock a. m., pursuant to adjournment. Present: Senators STOCKBRIDGE (chairman) and SQUIRE.

TESTIMONY OF HERBERT A. GILL—Continued.

The CHAIRMAN. You can resume now, Mr. Gill.

The WITNESS. Mr. Chairman, apparently there are three sets of papers. I have designated them as A, B, and C, and have drawn up corresponding statements, and I can answer questions in that way perhaps more effectively.

Referring to Table A, showing some of the favorites, I will simply mention the exceptions.

Anthony Addison. The salary of Mr. Addison is put at \$1,380 in 1887. The salary July 1, 1887, was \$1,320, a difference of \$60; \$60 less in 1887. In April, 1890, it was \$1,500. The actual increase is \$180. As submitted by your list it is \$280, a difference of \$100.

By the CHAIRMAN:

Q. Why was that increase made?—A. Mr. Addison is an old employé; is very faithful and efficient, and the work has increased by reason of new stations. In regard to Mr. Atkins, I explained yesterday, stating that he was relieved of the charge of the Wood's Holl (Mass.) station at his own request, and he went back to his old post and at his old salary.

The next exception is that of T. H. Bean.

Q. What about A. B. Alexander, increased from \$720 in 1887 to \$1,200 in 1890?—A. A. B. Alexander, when he first went on the Commission in 1887, was the ship's writer of the schooner *Grampus*. In the fall of 1887, after Professor Goode became Commissioner, and when the *Albatross* was preparing for a cruise around the Horn to the Pacific coast, where she was ordered by specific act of Congress, Mr. Alexander, who had been a fisherman all his life, was designated as the fisheries expert of the vessel, and he was ordered thereto.

The expense of living on the *Albatross* is and was much higher than on the *Grampus*. Professor Goode then increased his compensation by reason of this new work to \$90 a month. Later on, after the *Albatross* had gotten to work there on the Pacific coast and had gone to Alaska, the commanding officer, Captain Tanner, wrote recommending that Mr. Alexander's compensation be increased to \$100 a month, and it was on this recommendation that the increase was made.

Q. That increase was made by Mr. McDonald?—A. Yes, sir.

Q. Upon the recommendation of Captain Tanner?—A. Upon the recommendation of the commanding officer of the *Albatross*.

Q. The next is C. G. Atkins; how about him?—A. Atkins I have already explained. Patrick Barry is simply a laborer, and was first employed at \$40 a month, or \$1.33 $\frac{1}{3}$ a day, which was afterwards increased to \$1.50 a day.

Q. Was that done on account of increased efficiency?—A. He is a good man. It is laborer's pay.

The next is T. H. Bean. Dr. Bean's compensation February 1, 1888, before Mr. McDonald became Commissioner, was \$2,100. July 1, 1887, it was \$2,000. Colonel McDonald increased his compensation from \$2,100 to \$2,400, an increase of \$300, for, I suppose, good and sufficient reasons; but I can not say why.

Q. Is he the editor?—A. He is the ichthyologist of the Commission and the editor.

Q. Of publication?—A. Yes, sir.

Q. Is it true that the labor in that branch of the service has increased as the stations have increased, and so on? Does Mr. Bean have more to do?—A. I should say he had, because there is more work going through the Public Printer, and the editing of papers has increased. I know, for example, that he has been very busily engaged in the preparation of the special report on salmon fisheries in Alaska, the investigation of which was ordered by act of Congress.

Q. And that was new work?—A. Yes, sir; that was new work. W. H. Brittain was a boy when he entered the Commission, but has grown to be quite a young man. On July 1, 1887, he received \$25 a month as a messenger. He has since done more or less clerical work, and his compensation was increased \$10 a month, making it \$35 a month.

Q. Does Brittain receive any more than others who do similar work?—A. No, sir.

The next is George E. Butler. On July 1, 1887, his compensation was \$45 a month, and it was the same on February 1, 1888. The beginning of the fiscal year after Colonel McDonald became Commissioner we removed our offices, which were then situated on both Massachusetts avenue and N street, to the Safe Deposit Building, corner Fifteenth street and New York avenue. There were three janitors and messengers. One got \$60 a month; one got \$45 a month, and one got \$50 a month. The compensation was made uniform, and all were given \$50 a month, it being thought that that was a fair and proper compensation for the duties performed. It was not merely janitor, but messenger service also.

Q. Captain Collins is next?—A. J. W. Collins. On July 1, 1887, he was the commanding officer of the *Grampus*. On February 1, 1888, he had supervision of the *Grampus*, but was detailed here as a special fisheries expert to appear before the International Fisheries Commission, which was then in session. I think Professor Goode increased his compensation to \$2,000 a year.

Q. Professor Goode increased his salary?—A. Yes, sir.

On the re-arrangement of the offices, the salary of the assistant in charge of the division of fisheries was made \$2,400. Mr. Earle, who was then in charge, resigned, and Captain Collins was appointed to the place. In September, I think it was, of 1889, the compensation of that office and also of the office of the assistant in charge of the division of scientific inquiry was raised to \$2,700 per annum.

Q. Were the duties of the offices increased?—A. Well, it was supposed, as I understand it, that the compensation was more commensu-

rate with the duties exacted; not necessarily that the duties were increased.

Q. You spoke of Mr. Earle resigning; was his resignation voluntary?—A. Yes, sir.

Q. Where did he go?—A. He is now connected with the National Museum under Professor Goode.

Q. The next is W. F. Conway?—A. Mr. Conway's compensation was \$540 in July, 1887; the same on February 1, 1888, and in April, 1890, he was not on the rolls. He was discharged after an investigation of certain charges which he brought against the superintendent of the carp-ponds. They were thoroughly inquired into, and Conway was informed that unless he could substantiate them he would be discharged. They were not substantiated, and he was discharged.

Q. He is down here as reduced from \$540 to \$480 on this list?—A. He was not on the rolls April, 1890. That is erroneous.

Q. He was discharged for cause?—A. He was discharged for cause.

H. D. Dean, in charge of the Northville (Mich.) Station. In 1887 his compensation was \$600 a year, and the same February 1, 1888. He was then a watchman and a subordinate employé of the station. His duties were increased by the superintendent of the station, and he has been foreman, and a corresponding increase was given him, to \$900 a year.

Q. Is that what the superintendents of other stations receive?—A. He is simply the foreman, not the superintendent.

Q. The next is F. P. Fennell?—A. The amounts given here are correct. The increase, \$600, is correct, but it was made at different times. At one time his salary was raised to \$900, and by continued efficiency on his part it was again raised, and he was given \$1,200.

Q. What is his position?—A. He is a stenographer and general assistant to the chief clerk.

Q. Was he raised on account of an increase of work?—A. Increase of work and increased competency.

The next is that of my own salary.

Q. That shows an increase of \$200?—A. The amounts therein mentioned are correct. Of course, I consider that that increase is justified.

Q. As a matter of fact, Mr. Gill, have your duties increased; is there more to do?—A. There is more to do, and there are greater disbursements. I am under a bond of \$25,000. My disbursements average in the neighborhood of \$350,000 a year. The amount is not so great, but we have some twenty odd stations; we have three vessels; we have three cars, and at certain seasons of the year we have a large number of temporary employés.

In addition to the regular work of the Commission there have been certain appropriations made for specific constructions; for instance, at Lake Erie, at Neosho, at Leadville, all of which were additional, requiring the preparation of advertisements, the preparation of contracts, as well as the examination of accounts and the disbursement of money.

Q. That increase was made by Commissioner McDonald?—A. Yes, sir; on July 1, 1889.

The next is Ansley Hall. The list says "in the 1889 Blue Book," \$540 in 1887, and \$900 in April, 1890. His compensation April, 1890, is \$900. July 1, 1887, he was not on; February 1, 1888, he was not on. He is an employé of the Fish Commission, first placed on duty May 8, 1889, at \$45 a month.

Q. Was he not in the Blue Book in 1889?—A. Yes, sir; May, 1889, probably in the Blue Book.

Q. Was his salary increased from \$540 to \$900?—A. It has been the custom in making new appointments for work that is not altogether technical in its character to bring in a person at a low salary, with the understanding that if he proves his efficiency and competency there is a chance for promotion.

Q. What are his duties?—A. He is a field agent in the statistical division of fisheries, engaged in the gathering of statistics of fisheries. The question of compensation and increases, etc., is left to the recommendation of the assistant in charge of that division.

Q. And for efficiency and good service was recommended for an increase?—A. So I understand.

Q. Does he receive more than others who occupy similar positions?—A. No, sir; about the same.

The next is W. K. Hancock. When Hancock was first brought on he was a young man living in Wytheville, Va., where labor and living are cheap.

Q. Is there a station there?—A. There was a station there, and there is now. He applied himself, and became quite proficient and efficient, not merely with regard to salmonidæ, but in shad hatching. During this spring he was temporarily transferred from Wytheville to Washington, and has since been ordered to Leadville, Colo., and his compensation was increased. In April, 1890, it was at the rate of \$720 a year.

George A. Jones. The rates mentioned there, \$660 in 1887, \$720 in 1890, are correct, but the increase instead of being \$120 is but \$60, as you see.

The CHAIRMAN. I see.

The WITNESS. That is \$5 a month.

By the CHAIRMAN.

Q. Was his salary increased on account of increased service and increased value?—A. Yes, sir; an increase. He is a laborer, but has acquired some skill as a fish-culturist too.

D. W. Kenly. His compensation on July 1, 1887, was \$720 a year, not \$780. His compensation February 1, 1888, was \$780, and on April 1, 1890, \$960, an increase, apparently, of \$180 a year. Mr. Kenly is a fish-culturist and also a skilled carpenter. It has been found expedient right through the service of the Commission when possible to get men of that kind, so that when one work ceases they could be used in another.

Q. For another purpose?—A. Yes, sir.

C. E. Latimer. His compensation on July 1, 1887, was \$660 a year; on February 1, 1888, prior to Colonel McDonald coming in, it was \$840, and in April, 1890, it was \$1,100.

Q. What is his position?—A. He was a clerk in Mr. Smiley's division, and I think I have got a letter specially recommending him for increase, if I mistake not [consulting paper]. No, this goes back prior to that time, but that increase was made upon Mr. Smiley's recommendation. Mr. Smiley was in charge of the office to which Mr. Latimer was attached.

"C. C. Lewis, relative of McDonald." I do not know whether Mr. Lewis is a relative of Colonel McDonald or not, although I believe he is a connection either of his or his wife. I am not certain.

Q. What are his duties?—A. He is now at Wytheville, Va., having recently returned from Leadville, Colo., and was ordered to Wytheville in connection with the shipment of trout. He is now temporarily attached there.

Q. What is his position now?—A. He has, I believe, become more or less proficient as a fish-culturist, and is an expert messenger in the distribution of fish.

Q. Is his salary the same or more or less than others occupying the same position?—A. He is not occupying the same position. He went on first at about \$45 a month as an apprentice messenger, as it is called, in the distribution of fish. He was then increased to \$60 as assistant messenger. Then, I think, he was made an assistant in the hatchery, but I am not certain, at \$75 a month, and when ordered to Leadville, by reason of the increased expense of living out West, his compensation was raised \$15 a month, 50 cents a day, practically covering a part of the increased cost of subsistence.

Q. But is his salary larger than that of the man who occupies the position which he occupied at Leadville? When he came away from Leadville somebody took his place, I suppose?—A. Hancock took his place. I could tell you in a minute by going to my books. I am not certain.

Q. W. K. Hancock?—A. Yes, sir. This list only gives it up to April, and he has since been ordered there.

Q. I would like to know whether the man who took his place receives more or less than he did?

The witness retired from the room, and having returned said:

A. As stated, Mr. Hancock's salary was \$60 a month. I find that since he has been ordered to Leadville his compensation has been increased \$15, making \$75, which is less than Mr. Lewis was receiving, but it is a proportionate increase on his salary.

Q. Is the salary Mr. Lewis is now receiving at that hatchery, \$1,080, more or less than men occupying the same position at other hatcheries receive?—A. That I can not definitely answer, because those places vary. It depends a good deal upon the skill of the man, and I am not competent to speak as to the skill of these men.

Q. Here is another Lewis, Robert E. Lewis?—A. Robert E. Lewis is an appointee of Mr. McDonald. It is true that in April, 1890, he received \$780, but it was simply while temporarily employed at Fort Washington, Md. He is a clerk here at Washington, and was receiving \$50 a month at his home here. When he was ordered down there, instead of paying his expenses, an increase of \$15 a month was given him, making it \$65 a month against \$50. He is now back in the office at a salary of \$50 a month.

That finishes that list.

The list designated "A" is as follows:

A.—List submitted “showing some of the favorites”, as shown by the records of the Commission.

Name.	1887.	April, 1890.	In- crease.	De- crease.	July 1, 1887.	Feb. 1, 1888.	Apr. 1, 1890.	In- crease from Feb. 1, 1890.	De- crease from Feb. 1, 1890.
W. H. Abbott	\$600	\$900	\$300	.....	\$600	\$600	\$900	\$300	.....
Anthony Addison.....	1,380	1,500	280	.....	1,320	1,320	1,500	180	(*)
A. B. Alexander	720	1,200	480	.....	720	720	1,200	480	.....
C. G. Atkins.....	2,400	1,800	.....	\$600	2,400	2,400	1,800	.....	\$600
Patrick Barry.....	480	540	60	.....	480	480	540	60	.....
T. H. Bean.....	2,000	2,400	400	.....	2,000	2,100	2,400	300	.....
W. H. Brittain	300	540	240	.....	300	300	420	120	.....
George E. Butler.....	420	600	180	.....	540	540	600	60	.....
J. W. Collins.....	1,800	2,700	900	.....	1,800	2,000	2,700	700	.....
W. F. Conway	540	480	.....	60	540	540	(†)	.....	.....
H. D. Dean	600	900	300	.....	600	600	900	300	.....
F. P. Fennell	600	1,200	600	.....	600	600	1,200	600	.....
Herbert A. Gill	2,200	2,400	200	.....	2,200	2,200	2,400	200	.....
Ansley Hall †	§540	900	360	.....	(||)	(||)	900	.....	.....
W. K. Hancock.....	¶240	720	520	.....	240	240	720	480	.....
George A. Jones.....	660	720	120	.....	660	660	720	60	.....
D. W. Kenly	780	960	80	.....	720	780	960	80	.....
C. E. Latimer.....	660	1,100	440	.....	660	840	1,100	260	.....
C. C. Lewis**.....	.....	1,080	1,080	.....	.....	(||)	1,080	.....	.....
Robert E. Lewis**.....	.....	.....	780	.....	.....	(||)	{ 600 } { 780 }	.....	.....

* Increase of work.

† Discharged.

‡ In 1889 Blue Book.

§ 1889.

|| Not on.

¶ 1887.

** Relative of McDonald.

The WITNESS. The next is list B, “some of the old trusted employes of the late Prof. S. F. Baird.” Mr. Atkins has already been explained. Those amounts are correct.

John E. Brown, Frank N. Clark, the same.

Q. They were in the previous list?—A. Some of them were and some were not. Mr. Atkins was. Mr. Brown, for instance, we find his salary is the same in 1890 as in 1887.

Q. Does he occupy the same position?—A. Yes, sir.

Q. What position does he occupy?—A. General store-keeper, office of distribution. He is sent out in distribution work in emergencies, and is purchasing agent for the office.

Q. Did he occupy the same position in 1887?—A. Yes, sir.

Q. How about Mr. Clark?—A. He occupies the same position, superintendent of the Michigan stations.

Q. He receives the same compensation and his duties are the same?—A. Yes, sir.

Q. W. A. Dunnington is the next.—A. W. A. Dunnington was not on regularly on July 1, 1887. He was a temporary employe and it was not until after Professor Baird's death that he was brought on as a permanent employe.

Q. Did he not appear in the Blue Book of 1887?—A. I suppose so; I have not looked at it.

Q. Probably he did as a temporary employe; what are his duties?—A. He is in charge of car No. 2. Mr. Moore, who is now superintendent of distribution, was promoted to that position and Mr. Dunnington was assigned to take his place on the car.

Q. At the same salary?—A. At the same salary. The salaries of car captains are uniform.

J. Frank Ellis is next.

Q. How about him?—A. He is a captain of a car.

Z. H. Goldsmith is foreman of the fish-ponds in the monument lot. He has been there for a number of years. His work is laboring, though

he has become very competent as a fish culturist, especially as applied to the ponds. I do not speak from my own knowledge, but simply from what I have heard.

Edward Hayes was stenographer to Professor Baird and is stenographer to the present Commission.

Q. Is the salary the same?—A. Yes, sir.

Q. Eighteen hundred dollars?—A. Yes, sir.

Q. There is nothing to compare that with. He is the only one. You can not compare his salary with any others?—A. No, sir; stenographic work is light one day and heavy the other.

Q. Rudolph Hessel?—A. His compensation is the same as it was prior to Mr. McDonald becoming Commissioner.

Q. It is down here at \$1,800 in 1887.—A. That is correct.

Q. What are his duties?—A. He is superintendent of the fish-ponds.

Q. Where?—A. In the monument lot. He is a German, and made the first effort to bring the German carp to this country, and I believe his first connection with the Commission was the transporting of some special salmon to the United States way back in the early part of Professor Baird's administration.

Q. Is his compensation the same as it was?—A. No, sir. He first received \$1,500.

Q. Miss Annie C. Lincoln?—A. She is a clerk engaged in posting up purchases of material, etc., keeping a record of them, etc.

Q. Her compensation is the same?—A. Her compensation is the same.

Q. Has there been any increase in her duties?—A. Comparatively no increase in duties. Perhaps there may have been a slight increase in work.

Q. Not excessively?—A. No, not an excessive increase.

Q. George H. Moore?—A. He occupied the position of car captain on July 1, 1887. On February 27, I think it was, he was promoted to the position of superintendent of distribution. Mr. Dunnington relieved him as car captain, and on March 1, 1888, his compensation was increased \$25 a month to \$1,500 a year. It is now \$1,800 a year, having been increased July 1, 1889.

Q. Is his present position the same as held by Mr. McDonald before he was made Commissioner?—A. It is not. Colonel McDonald was not merely the superintendent of distribution. He was in general charge of the work of fish culture, which included not only the propagation of fish, the supervision of work of a large number of stations of the Commission, but also that of the distribution of the food fishes.

Q. And Mr. Moore is simply the superintendent of distribution?—A. Yes, sir.

Q. While Mr. McDonald's salary was \$2,400, Mr. Moore's is \$1,800?—A. One thousand eight hundred dollars, but he performs but part of the work that Colonel McDonald performed.

Mr. W. de C. Ravenell is and has been for a number of years superintendent of the battery station on the Susquehanna River. That station is not occupied, or is not conducted rather, the whole year, the active operations being confined to the shad season.

Q. I noticed that his salary is \$1,500, while Mr. Clark at Northville receives \$2,200.—A. There is a difference in stations. You will find that right straight through. In some places labor is more expensive, living is more expensive, and the Commissioner has tried as a rule to adjust the compensation of superintendents of stations on an equitable

basis, not merely to take into consideration the work done at the stations—

Q. But the cost of living?—A. The cost of living at these places.

Q. Washington Robinson?—A. His name was on the previous list. He is a janitor.

Q. His salary seems to be reduced?—A. As I stated, when the offices were brought down to Fifteenth street and New York avenue, to the Safe Deposit building, the salaries of messengers and janitors were put on a uniform basis.

Q. Were the duties less after that adjustment than before?—A. They were about the same.

Q. They were all put upon one basis?—A. Yes, sir.

Q. Occupying the same position and receiving the same pay?—A. Yes, sir.

Q. Miss Julia Rockwell?—A. She is a record clerk, and her compensation has been continued right straight along about the same. I do not know whether her duties have been increased specifically or not.

Q. As the general work has increased, has the work increased in some departments?—A. In some departments.

Q. So the work in some particular department would be more apt to remain as it was than it would in other departments?—A. In one sense I should say it might, because a large part of the correspondence of the different branches of work is, I believe, kept in the different offices and looked after and does not enter the general files, which in some cases, or nearly all cases, was brought to the general files before. I speak that generally from my belief and not from actual knowledge.

Q. How about J. Paul Wilson?—A. J. Paul Wilson was years ago a stenographer, one of the stenographers to the Commissioner, and general clerk, and in 1884 or 1885, I think it was, was made property clerk. He has general charge of keeping the records in regard to property, where it is, what it has cost, etc.

Q. His compensation is the same?—A. It is the same. There has been no practical increase of duties. That finishes that list.

The list designated as "B" is as follows:

B.—List submitted. "Some of the old trusted employes of the late Prof. S. F. Baird," as shown by the records of the Commission.

Name.	1887.	1889.	1890.	Decrease.	July 1, 1887.	July 1, 1889.	June 1, 1890.
C. G. Atkins.....	\$2,400	.....	\$1,800	\$600	\$2,400	\$1,800	\$1,800
John E. Brown.....	1,200	\$1,200	1,200	.....	1,200	1,200	1,200
Frank N. Clark.....	2,200	2,200	2,200	.....	2,200	2,200	2,200
W. A. Dunnington.....	1,200	1,200	1,200	.....	(*)	1,200	1,200
J. Frank Ellis.....	1,200	1,200	1,200	.....	1,200	1,200	1,200
Z. H. Goldsmith.....	840	840	840	.....	840	840	840
Edward Hayes.....	1,800	1,800	1,800	.....	1,800	1,800	1,800
Rudolph Hessel.....	1,800	1,800	1,800	.....	.....	1,800	1,800
Miss Annie C. Lincoln.....	600	600	600	.....	600	600	600
George H. Moore†.....	.....	.....	.....	.....	1,200	1,800	1,800
W. de C. Ravenel.....	1,500	1,500	1,500	.....	1,500	1,500	1,500
Washington Robinson.....	700	600	600	.....	720	600	600
Miss Julia Rockwell.....	840	840	840	.....	840	840	840
J. Paul Wilson.....	2,000	2,000	2,000	.....	2,000	2,000	2,000

* Not on till September.

† Same position as McDonald held at \$2,400, but Mr. Moore, with more work, only gets \$1,800.

The WITNESS. I will take the next list, "C." E. T. Locke. It is E. F. Locke. Mr. Locke was not on regularly in July, 1887. I think he had been previously employed temporarily.

Q. He is not down here?—A. In 1889 he was a general assistant and care-taker of station at Ten Pound Island, Gloucester, Mass., and incidentally gathered statistics of fisheries there. He was care-taker of the station. During the active operations of cod-hatching at that station his compensation was increased \$20 a month, making \$80 a month, and in April, 1890, he received that compensation. At this date the work of cod-hatching at Gloucester having ceased, he has been put back to his old compensation of \$60 a month.

Q. Then it appears correctly that he received \$960, but now he is back at \$720?—A. Now he is back at \$720.

Q. William Maynard?—A. William Maynard received in 1887, \$540. In 1889, \$720.

Q. In 1887, \$540?—A. Yes, sir, and in 1889, \$720.

Q. Was his position changed?—A. He became more expert. He was made night watchman. He had shown that in case of an emergency with the aquaria or with the fish-hatching operations he could provide for it temporarily until proper assistance came. I, however, make the increase but \$180 a year instead of \$280 a year; \$540 and \$280 would make \$820, and not \$710.

Q. An increase of \$180?—A. Yes, sir.

Q. Was the salary increased on account of long service and proficiency?—A. Yes, sir.

Q. Andrew McCormick?—A. Andrew McCormick was an employé of the Duluth (Minnesota) Station, which did not enter into active operations until the fall of 1888, I think it was. He was first put on as a general assistant in the hatchery at \$50 a month, and later on, some months ago, comparatively, I think a resignation took place, and his duties were increased and his compensation was increased.

Q. To \$900?—A. Yes, sir.

Q. Do you know whether he is a relative of Mr. McDonald?—A. I think he is no relation in any way; he was a man picked up out there.

Q. Is there another McCormick in the service?—A. Yes, sir; in the next room.

Q. Francis McCormick; what about him?—A. Francis McCormick, this paper states, is a nephew of Mrs. McDonald. That I do not know. I believe he is some connection of Mr. McDonald or of his wife.

By Senator SQUIRE:

Q. Would you be likely to know in regard to these relatives of his or not? Sometimes charges are made in regard to favoritism by reason of some connection or especially friendly relation. Would you be apt to know whether they are or not members of the family, or relatives, or special friends?—A. I hardly would. I know he is some connection. What it is I do not know.

By the CHAIRMAN:

Q. When was he appointed?—A. I think it was about July, 1888.

Q. What is his compensation?—A. \$50 a month.

Q. What are his duties?—A. He is general clerk in the division of scientific inquiry.

Q. Is the salary paid him the same as that paid other clerks in the division?—A. It is less.

Q. Is that on account of being a new man?—A. He is a young man; he has not had time to work up yet.

Q. Are there any other clerks there who receive less than \$50 a month in that office?—A. There are none.

Q. George H. H. Moore?—A. Mr. Moore has been explained.

Q. He was in the previous list?—A. Yes, sir.

Q. How about Miss M. L. Nicholson?—A. She is a clerk in my office. She is an expert type-writer and an excellent penman, an educated woman and a hard worker. She is no relation of mine, and I have known her but a little while. My wife has known her for a very long while.

Q. In 1889 her salary was \$900?—A. Yes, sir.

Q. I see it is increased.—A. Going back to February, 1888, her salary was \$600. She was brought in at \$50 a month, and by application she demonstrated by work that she was able to do good work, and her salary has been increased. Her duties have necessarily been increased by reason of the increase of work.

Q. It was increased from \$600?—A. From \$75 a month to \$90 a month.

Q. When was that increase made?—A. That increase was made about the first of January, 1890; that is my recollection.

Q. She is no relative of yours?—A. No, sir.

Q. Of your wife or of Mr. McDonald?—A. No, sir.

Q. How about J. J. O'Connor?—A. J. J. O'Connor has been in the Commission quite a number of years. In July, 1887, his compensation was \$1,380.

Q. What is his position?—A. He is chief clerk. On February 1, 1888, his compensation was \$1,800.

Q. In 1887 his pay was \$1,360?—A. One thousand three hundred and eighty dollars.

By Senator SQUIRE:

Q. What is it now?—A. Two thousand four hundred dollars. On February 1, 1888, before Mr. McDonald became Commissioner, Commissioner Goode increased his salary to \$1,800 a year, and he was, what you might say, chief clerk of the division of fish-culture. He had a great deal of correspondence to do, and he had the examination of a great many papers, and the examination of accounts sent in by the different stations.

By the CHAIRMAN:

Q. Then his salary was increased to \$2,200?—A. It was increased to \$2,200 July 1, 1889, and later on it was increased to \$2,400.

By Senator SQUIRE:

Q. When was it increased to \$2,400?—A. September, 1889, or August, 1889, I think.

By the CHAIRMAN:

Q. Where the salaries have been increased, have the duties been increased?—A. The position has been increased in this case. He has been given a higher position.

By Senator SQUIRE:

Q. What did he do later, when he got \$2,400, that he did not do when he got \$2,200?—A. I do not know that he does any thing different, only more of it. The Commission has been growing steadily and the correspondence has necessarily been very much heavier.

By the CHAIRMAN:

Q. The next name is that of Mr. Page?—A. W. F. Page was receiving \$1,200 a year.

Q. In 1887?—A. In 1887. He is an expert fish-culturist. Congress made an appropriation for the construction of a fish hatchery at Neosho,

Mo. It was necessary to appoint a man as superintendent of that station, and Mr. Page was appointed. His compensation was increased by reason of increased responsibilities, the increase of position.

Q. He is now in charge of that station?—A. He is now at Neosho, in charge of the station.

Q. The next is Mr. Parker?—A. H. P. Parker in 1887 was a clerk under Mr. Smiley. On February 1, 1888, he was still a clerk under Mr. Smiley, at a compensation of \$55 a month instead of \$30 a month, which he received in 1887. The increase was made upon the recommendation of Mr. Smiley—

Q. Has he been still further increased?—A. And if I mistake not the increase to \$70 a month was made upon the recommendation of Mr. Smiley. The records of the Commission probably would show that. He is now connected with the chief clerk's office.

Q. He is in a different position now?—A. He has more work. It is practically the same position; the duties are practically the same.

Q. But the work has increased?—A. Yes, sir; and there is greater efficiency in the work.

Q. P. C. Pearce?—A. That is T. C. Pearce. He first came on the Commission in a temporary position. He now occupies—no, he does not; he occupies a more permanent position, as a temporary apprentice messenger in the distribution service, at \$45 a month.

Q. That is \$540 a year?—A. Yes, sir. Shortly after Colonel McDonald became Commissioner the car service of the Commission was put on a permanent basis. The cars, during a large part of the year prior to his taking charge, were laid up. Commencing with 1888, the work of the collection of indigenous fishes of the Mississippi Valley was entered upon. The cars were sent out there, and the fish were collected from the different pools that were left after the overflows.

Q. That was explained to us by Mr. Gay yesterday, was it not?—A. And Mr. Pearce was put on first, I think, at \$45, and afterwards promoted, as a vacancy occurred, to \$60 a month. He has become very efficient, I should judge, from the fact that, during this spring in the shad-distribution work, the Commissioner found it desirable to ask from the Pennsylvania Railroad Company the use of a baggage-car, and Mr. Pearce was placed in charge of it, made an independent messenger in charge of a car?

Q. And his pay was increased on that account?—A. On that account, efficiency; yes, sir.

Q. How about Charles Perry?—A. Charles Perry was first employed as a seaman on the schooner *Grampus*, the uniform compensation of which position is \$45 a month. He resigned, to the very best of my recollection, from that place, and later on was temporarily employed as a spawn-taker in the collection of eggs of cod-fish at Gloucester, Mass. He is not now on the rolls of the Commission, that work having ceased.

Q. When he did that work his pay was increased?—A. It was a different position. He was a spawn-taker at \$60 a month. When he was first employed he was a seaman at \$45 a month.

Q. S. L. R. Pritchard, how about him?—A. He is a clerk in the division of fisheries.

Q. A clerk?—A. In the division of fisheries, in the preparation of statistics. He was first brought on at \$50 a month. As he became more proficient to do the work, more competent, his salary was increased.

Q. It is now \$780?—A. It is \$65 a month.

Q. R. R. Rathbun?—A. Mr. Rathbun's compensation in 1887 was \$2,000.

Q. What is his position?—A. He is the assistant in charge of the division of scientific inquiry.

By Senator SQUIRE:

Q. Assistant?—A. Assistant in charge. In 1887 his compensation was \$2,000. On February 1 his compensation was \$2,200, the increase from \$2,000 to \$2,200 having been made by Commissioner Goode.

Q. In 1887?—A. Yes, sir; when Professor Goode was Commissioner.

Q. It had been raised to \$2,200 before Mr. McDonald became Commissioner?—A. Yes, sir. On July 1, 1889, the compensation was \$2,400, and it is now, and has been since September 1, 1889, \$2,700, the compensation of the two assistants in charge of the two principal divisions of work of the Commission having been made uniform, Captain Collins and Mr. Rathbun.

By the CHAIRMAN:

Q. Mr. Robinson seems to be the next man.—A. E. M. Robinson is a fish-culturist. In 1887 his compensation was \$80 a month. In July, 1889, it was \$1,200 a year. He was from time to time placed in charge of special work in fish-culture, in charge of the hatchery, instead of being merely an assistant in the hatchery. It was first increased to \$1,200. In the fall of 1889 he was ordered as superintendent of the Leadville (Colo.) Station. His duties were to arrange for the commencement of the active work of propagation, and also to have supervision in regard to the construction going on there. We had a special man there, who was afterwards relieved very near the completion of the work, and Mr. Robinson took the matter up after that.

Q. He is in charge of that station?—A. He is now superintendent of that station.

Q. His compensation is \$1,500?—A. Yes, sir.

Q. Is that the same others receive at the other stations?—A. It is less, when you take into consideration that Leadville is a Western station. Living in Colorado I believe is a little high. I should say that the compensation was not extraordinary, and perhaps might be somewhat under the ordinary.

Q. It is less than Mr. Clark receives?—A. It is less than Mr. Clark's compensation, but Mr. Clark is in charge of two stations.

Q. Another Mr. Robinson?—A. Wash. Robinson. We have already passed upon that. He is a janitor. I have spoken of him.

Q. E. K. Noyes?—A. That is entered here as E. J. Royers. The name is E. I. Rogers.

Q. In 1887 he seemed to be receiving \$720?—A. Mr. Rogers first came on the Commission some years ago, in the distribution service as an apprentice messenger in the car service. Afterwards he was transferred to the office as a copying draughtsman.

By Senator SQUIRE:

Q. What pay does he get now?—A. Nine hundred dollars.

Senator SQUIRE. He is the one who complained he did not get enough?

The CHAIRMAN. Yes, sir.

By Senator SQUIRE:

Q. Is there any reason why he is not paid more? There seems to be a great deal of liberality in regard to the increasing of the pay of these employés. Do you know of any favoritism or lack of favor to account for his not receiving more?

The CHAIRMAN. He is down here in the list of favorites whose pay has been increased. It has been increased from \$720 to \$900.

By Senator SQUIRE:

Q. He stated that he performed work that was equal to that of men who received much more and he felt that he ought to receive more.—A. I am not capable of passing upon that.

By the CHAIRMAN:

Q. When was this increase from \$720 to \$900 made?—A. In 1888, in June, I think it was. He was temporarily assigned as inspector of the work being done under contract at the carp ponds in the Monument lot, and his compensation was increased from \$60 a month to \$75 a month at that time. On the cessation of that work he was put back at the old figure. Afterwards, I think it was a few months afterwards, his compensation was regularly increased to \$900 per annum.

Q. How about Tom P. Sauerhoff?—A. That should be William P. Sauerhoff. It is probably a type-writer mistake. Mr. Sauerhoff is like some of the other men; he is a carpenter and an expert mechanic, in addition to being a fish culturist.

Q. He is down here as receiving \$900 in 1887, and \$960 now.—A. His compensation varied from \$75 a month to \$80 a month, according to the place he was ordered to. If he was stationed at a place where the Commission had a mess, had quarters, his compensation was \$75 a month. If he was ordered here to Washington it was made \$80 a month.

Q. Five dollars a month more?—A. Yes, sir.

Q. How about Mr. Charles W. Scudder?—A. Mr. Charles W. Scudder received in 1887, \$1,080; July 1, 1889, \$1,200; and he is now receiving \$1,280.

Q. What position does he occupy?—A. He was the clerk, principal clerk to Mr. Smiley for a time, and afterwards, about a year ago, he was transferred to the office of the chief clerk, and put practically in charge of the recording of correspondence.

Q. His salary was increased \$120?—A. Yes, sir.

Q. There was a change of duties?—A. Practically the same duties, but he became competent. June 25, 1885, Mr. Smiley addressed a letter to Professor Baird in regard to Mr. Scudder:

JUNE 25, 1885.

With the close of the fiscal year I feel called upon to report the general efficiency of my assistants, and to recommend them to such advancement, financially, as you may find in harmony with your plans for 1885-'86. Mr. Scudder has had added responsibility since January first, in the matter of mailing, and you have had opportunity of knowing his value in this respect. I think he should rank at least as a first-class clerk at \$100, if you have the means to place him at that rate.

By Senator SQUIRE:

Q. That shows Mr. Smiley approved of the raise.—A. That is signed Charles W. Smiley, June 25, 1885, but the increase did not take place until after Colonel McDonald came in, which, I think, took place July 1, 1888, which you see was three years afterwards—

Q. Was that increase made?—A. And during all that time Mr. Scudder was under Mr. Smiley.

Q. Do you know whether Commissioner McDonald's attention was called to that recommendation of Mr. Smiley?—A. I can not tell you, sir.

By the CHAIRMAN:

Q. Would it have been apt to have been?

By Senator SQUIRE:

Q. It is on file in the office; you have taken it from the files?—A. Yes, sir.

Senator SQUIRE. It necessarily would have been called to his attention.

The CHAIRMAN. Mr. Scudder would have been very apt to have called his attention to that recommendation.

By the CHAIRMAN:

Q. How about George A. Seagle?—A. George A. Seagle was the superintendent at the Wytheville (Virginia) Station.

Q. When?—A. In 1887, also in 1889 and at the present time. His compensation was \$900 a year in 1887. On the coming in of Colonel McDonald the station at Wytheville was enlarged and the work increased, a larger number of fish were kept there; they had to be fed, and the question of feeding the fish up to a certain size before they were distribute l——

Q. Did that necessitate an increase of work?—A. And the superintendent was given a compensation of \$1,200, which is the least compensation paid to a superintendent.

Q. Did you state what station he was in charge of?—A. Wytheville, Va.

Q. The next man seems to be Hugh M. Smith?—A. Mr. Smith is the principal statistical clerk in the division of fisheries. He was first employed when Mr. Earle was in charge of statistics, at \$50 a month. He was first brought in, and afterwards——

Q. In 1887?—A. Yes, sir, in 1887. On February 1, 1888, his compensation was \$960, and on July 1, 1889, his compensation was \$1 200, and later on, I think this year, it was \$1,380, an increase of \$15 a month. Mr. Smith, I understand, is extremely competent and a careful statistician.

Q. That shows from 1887 to 1890 an increase of \$780. Is that an average increase?—A. But the increase from February 1, 1888, is not so great.

Q. No; but I speak by this table. In 1887 it was \$600. That was when he first entered the commission?—A. Yes, sir.

Q. Now, he is in charge of the station and receives \$1,380?—A. Yes, sir, \$1,380.

Q. How about Charles H. Stevenson?—A. Charles H. Stevenson is a clerk and field agent in the collection and preparation of statistics. He was, I believe, a school teacher in some little Chesapeake county (Maryland) school. He was interested in the matter of fisheries. He was run across by one of our agents out, and he was given an opportunity to take up this work. He wanted to leave school-teaching, I believe, and accepted the compensation of \$30 a month in order to be allowed to do that work.

Q. Thirty dollars a month?—A. Yes, sir.

By Senator SQUIRE:

Q. What year was that?—A. The year is not given. In 1889 and later on his compensation was increased to \$50 a month. It was shown that he had done good work, and still further on he was not only sent out to collect statistics, but he was brought here to the office and in order to collate the same, which was increased duty and required some skill. Under those circumstances his compensation was increased.

By the CHAIRMAN:

Q. Increased to \$900?—A. Yes, sir; \$75 a month.

Q. Is he still employed by the commission?—A. Yes, sir.

Q. Albert J. Stoerzer?—A. Albert J. Stoerzer has been employed a number of years. First at \$20 a month. In July, 1889, his compensation was increased to \$30 a month, and now it is \$50 a month.

Q. What position does he occupy?—A. He occupies a semi-clerical and messenger position in the library. He is of German parentage, rather his parents were German. He has rendered himself quite competent in the translation of German papers and letters and I believe is a very efficient young man.

Q. How about Livingston Stone, of New Hampshire?—A. Livingston Stone has been connected with the commission for a great many years; in fact, since the inception of the fish-cultural work. He was first assigned as a so-called deputy for the Pacific coast at a salary for a part of the year of \$250 a month. He was not paid the whole year round.

Q. I see it is put on this list that his pay in 1887 was \$500?—A. I put that on. In 1887, and for some time prior to the beginning of that year, he had charge of the work at Baird's Station, California, the work of which had been very much reduced; in fact, almost suspended for a time. He was placed in charge, but not required to be there. But he exercised supervision over the employes out there. Nobody here had ever been there, and did not know what was necessary.

Q. He had supervision of other stations also?—A. He was East at his home, but exercised supervision there at a nominal compensation of \$500 a year.

Q. In 1889 he is down at \$2,000?—A. Yes, sir. In the fall of 1887 steps were taken towards the selection and procurement of a station on the Columbia River, Oregon, or one of its tributaries, which had been authorized by specific act of Congress. Mr. Stone had been in that region, on fish cultural work, a number of years before, and by reason of his knowledge of the locality was sent out to select a site for the station. This was in the fall of 1887 (prior to Colonel McDonald becoming Commissioner), at which time he was placed on the Commission's roll at a regular salary.

Q. At a salary of \$2,000 a year?—A. Yes, sir.

Q. Why was he dropped?—A. He has been ordered East, and temporarily furloughed without pay. I do not know that it is the Commissioner's intention to permanently discontinue his services.

Q. Why was that?—A. He wanted to come East, and the work had let up. There was a foreman put in charge, and Mr. Stone was detached from that station in order to come East.

Q. Why do you say he was dropped?—A. He wanted to come East, I understand, and the station was put in charge of an acting superintendent. Why he was dropped I do not know. I did not hear of any special reason. They found they could get along without him for the time.

Q. R. O. Sweeny, sr.?—A. Mr. Sweeny was appointed superintendent

of the Duluth Station, a new station which was ordered by Congress, and which was not ready for occupation until the fall of 1888. Dr. Sweeny had been commissioner of fisheries for the State of Minnesota a great many years, and was an expert fish-culturist, and also well acquainted, I believe, with fish matters generally. In looking around for a superintendent he was selected. His compensation was first fixed at \$1,500 a year. It was afterwards increased to \$1,800 a year, it being deemed by the Commissioner, I believe, that that was a more equitable compensation.

Q. Is he still in the service?—A. He is still in the service.

Q. R. O. Sweeny, jr.?—A. He is a son of R. O. Sweeny, sr. He was employed as a machinist on the recommendation of Dr. Sweeny, his father. He has been employed for a part of a year. He is not now on the Commission rolls; he resigned.

Q. He was employed at the Duluth Station?—A. Yes, sir.

Q. At \$840 a year?—A. Yes, sir; a year. He resigned I believe to take some position on some vessel on the lakes there. As to that I simply speak from what I understand, not from my knowledge.

Q. How about Robert Timbers?—A. Robert Timbers is a colored man. He was first employed as a general laborer at \$15 a month. He has been gradually increased until his compensation was made \$60 a month. He is a hard-working man.

Q. What are his duties?—A. In connection with the aquaria, principally—

Q. At this station?—A. But he has been trained as a general assistant in the matter of fish-culture.

Q. Is he competent to treat fish, to take care of them?—A. I believe he has learned to take care of fish when they become sick. I do not suppose he would be competent to be put in general charge. But for emergencies I understand he has become quite competent, and is a faithful man.

Q. He was increased. In 1887 he received \$540, and in 1889 he received \$720?—A. Yes, sir.

Q. Who increased his compensation to \$720?—A. The present Commissioner. On July 1, 1887, he was temporarily employed at Wood's Holl, having been ordered there. Wood's Holl is a very hard place to get servants. He was ordered down there by Professor Baird as the janitor of the building, and in order to cover the cost of his subsistence, \$5 a week, his compensation was increased for the time being.

Q. You say he was sent there by Professor Baird?—A. Yes, sir.

Q. I understand you to say his compensation was increased by Colonel McDonald?—A. That was done in 1888.

Q. Between these dates?—A. Yes, sir. From July 1, 1887, Robert Timbers's compensation was temporarily increased \$22.50 a month, during the time of his stay at Wood's Holl, Mass., where he had been ordered for a short period by Professor Baird.

The list, designated as "C," is as follows:

C.—List submitted.

Name.	1887.	1889.	April, 1890.	Increase.	Decrease.
E. F. Locke.....		\$720	\$960	\$240	.....
William Maynard.....	\$540	720		280	.....
Andrew McCormick.....		600	900	300	.....
Francis McCormick, nephew of Mrs. McDonald..					.....
George H. H. Moore.....	1,200	1,800	1,800	600	.....
Miss M. L. Nicholson.....		900	1,080	180	.....
J. J. O'Connor.....	1,380	2,200	2,400	1,020	.....
W. F. Page.....	1,200		1,500	300	.....
H. P. Parker.....	360		840	480	.....
P. C. Pearce.....		540	720	180	.....
Charles Perry.....		540	720	180	.....
S. L. R. Pritchard.....		600	780	180	.....
R. Rathbun.....	2,000	2,400	2,700	700	.....
E. M. Robinson.....	960		1,500	540	.....
Washington Robinson.....	720		600		\$120
E. I. Rogers.....	720		900	180	.....
William P. Sauerhoff.....	900		960	60	.....
Charles W. Scudder.....	1,080		1,200	120	.....
George A. Seagle.....	905		1,200	300	.....
Hugh M. Smith.....	600		1,380	780	.....
Charles H. Stevenson.....		600	900	300	.....
Albert J. Stoerzer.....	240	360	600	360	.....
Livingston Stone, of New Hampshire.....		2,000	(*)	(*)	.....
R. O. Sweeny, sr.....		1,500	1,800	300	.....
R. O. Sweeny, jr.....			840		.....
Robert Timbers.....	540	720		180	.....

Name.	July 1, 1887.	July 1, 1889.	April 1, 1890.	February 1, 1888.
E. F. Locke.....	(†)	\$720	\$960	(†)
William Maynard.....	\$540	720	720	\$540
Andrew McCormick.....	(†)	600	900	(†)
Francis McCormick, nephew of Mrs. McDonald.....	(†)	600	600	(†)
George H. H. Moore.....	1,200	1,800	1,800	1,200
Miss M. L. Nicholson.....	(†)	900	1,080	600
J. J. O'Connor.....	1,380	2,200	2,400	1,800
W. F. Page.....	1,200	1,500	1,500	1,200
H. P. Parker.....	360	840	840	660
P. C. Pearce.....	(†)	540	720	(†)
Charles Perry.....	540	(†)	720	540
S. L. R. Pritchard.....	(†)	600	780	(†)
R. Rathbun.....	2,000	2,400	2,700	2,200
E. M. Robinson.....	960	1,200	1,500	960
Washington Robinson.....	720	600	600	720
E. I. Rogers.....	720	900	900	900
William P. Sauerhoff.....	900	900	960	900
Charles W. Scudder.....	1,080	1,200	1,200	1,080
George A. Seagle.....	900	1,200	1,200	900
Hugh M. Smith.....	600	1,200	1,380	960
Charles H. Stevenson.....	(†)	600	900	(†)
Albert J. Stoerzer.....	240	360	600	300
Livingston Stone, of New Hampshire.....	500	2,000	(†)	2,000
R. O. Sweeny, sr.....	(†)	1,500	1,800	(†)
R. O. Sweeny, jr.....	(†)		840	(†)
Robert Timbers.....	§ 720	720	720	540

*Dropped. †Not on. ‡On leave, without pay. § While temporarily employed at Wood's Holl, Mass.

By the CHAIRMAN:

Q. George H. Talbot?—A. Talbert belongs to the same class of men as Sauerhoff and Kenly.

Q. What are his duties?—A. He is a carpenter and fish culturist, and those three men's salaries are about the same. They varied a little.

Q. I see he was increased from 1887 to 1889 \$60.—A. That is explained as I said before, \$5 a month. Tulian is an employé at the Alpena (Michigan) Station. In 1887 his compensation was \$45 a month

apparently, from this, and on July 1, 1887, he was not on the rolls of the Commission. He may have come on afterwards. He was a temporary employé as the work required his services. Nor on July 1, 1889, was he employed.

Q. In 1889 it appears his salary was increased from \$540 to \$600?—A. In October, 1889, he was brought on in the work in Michigan at a salary of \$50 a month; the compensation was fixed by the superintendent of the station and approved by the Commissioner. He is one of those men while practically a permanent man, should the work cease he would be dropped. There are a large number of persons in the Commission of that kind. They are brought on and dropped off from time to time.

Q. S. G. Worth?—A. Wilcox is next. Mr. Wilcox on July 1 drew a compensation of \$50 a month. He was then in charge of the Boston Fish Bureau, I believe, at Gloucester, Mass., engaged in the collection of statistics and reporting the same to fish-dealers of Boston, and his services were secured to gather the statistics of that neighborhood and report them, and he has been connected either directly or indirectly with the Commission for a large number of years.

Q. Is he connected with the Commission now?—A. He is now connected with the Commission, and his salary is \$115 a month.

Q. What are his duties?—A. At present he is on leave of absence by reason of sickness, without pay.

Q. What are his duties?—A. He is field agent in the collection of statistics and also in the preparation and collation of the same in the office. He is out in the field and back again.

Q. Preparing them for publication?—A. Yes, sir. S. G. Worth, on July 1, 1887, was employed at Weldon, N. C., in regard to the location of the fish-hatching station at that point. He was paid \$60 a month and his expenses. Later on, on July 1, 1889, his compensation was \$1,500 a year, and he was given a permanent position as superintendent of the central station.

Q. That is this station here?—A. Yes, sir. In addition to the duties of this station here, he is also the superintendent of the station at Fort Washington, Md., in the shad-hatching season, and looks out for things there. I should say that comparing the salaries paid to the other superintendents of stations, for example, \$1,200 at Wytheville, where living is cheap; \$1,500 at Neosho; \$1,500 at Leadville; \$1,800 at Baird, Cal.; \$1,800 at Duluth, Minn., that the compensation of \$1,800 here in Washington, and especially as there are two stations to look out for, and this is the general-purchasing station for outside stations, that the compensation of \$1,800 a year is but a fair compensation on that basis.

Q. During the shad season does he take charge at Fort Washington?—A. He takes charge there.

Q. Has he any additional compensation for that?—A. No, sir.

By Senator SQUIRE:

Q. I believe in the beginning of your examination you testified to what your duties were?—A. I stated I was the disbursing agent of the Commission and the general auditing clerk of the Commission.

Q. I hope you will not feel I am pressing you at all, but how does your salary compare with that of men employed in other Departments of the Government under similar circumstances?—A. I am a bonded officer.

Q. For instance, at the Interior Department and the Land Department of the Government, or any other Department, generally such as you know of?—A. I am a bonded officer, under a bond of \$25,000. My

disbursements aggregate perhaps \$350,000 a year, disbursed in small amounts, and covering expenditures of some twenty odd stations, three vessels, three cars and at certain seasons of the year a large number of temporary employés. I am not merely the disbursing officer, but the accounts all have to be stated or examined by my office, the majority of them are stated, which requires a great deal of work, and it can be readily seen that while \$300,000 may be disbursed in a few payments, and with but a comparatively small amount of work connected with the same, yet if you multiply the number of purchases the work is necessarily correspondingly increased.

Q. It has been claimed that there are others in other departments of the Government who disburse millions of money and do not receive anything like such compensation?—A. That may be very true, sir, but it must be borne in mind that the other disbursing clerks have nothing to do with the preparation of their accounts. The accounts are all prepared outside and are brought to them certified and approved, and their duties consist in drawing up a check and paying the same, or forwarding the same, perhaps, and keeping a record of their individual payments.

Q. How many assistants do you have?—A. I have three assistants and sometimes in stress I have a clerk temporarily.

Q. What pay do the assistants have?—A. They get \$1,500, \$1,080, and \$600.

Q. These names that we have been asking questions about are those, I believe, exclusively which have been submitted by outside parties who are interested to have this matter investigated. Have you a list of all the employés that you can furnish the committee?

The WITNESS. At the present time?

Senator SQUIRE. Yes, sir.

A. The Commissioner has prepared a list.

Q. Does that list show the employés from the beginning of the Fish Commission, with the wages of each one each year?

The WITNESS. Do you mean the permanent employés, or all employés?

Senator SQUIRE. We have been told there were 211. Here are about sixty odd. Now of course that would be a little over a third or less than a third. This is some work, but this is all work for us, and if you will prepare and submit to the committee a schedule such as could go into the printed record of the testimony, showing the regular employés from the beginning of the Commission, it would be so plain that it would speak for itself better than anything that we could get.

The WITNESS. That is a very long piece of work.

Senator SQUIRE. That goes back to what year?

The WITNESS. Back to 1871, and there are a great many employés.

Senator SQUIRE. In the beginning there were but few?

The WITNESS. Few permanent employés. There were many temporary employés brought in, and it would be a very hard thing to take and draw a line there.

Senator SQUIRE. How far back could you go?

The WITNESS. I can go back to the beginning.

Senator SQUIRE. At what time did the business get on to a settled basis so that it was relieved from these personal questions, this personal connection of Professor Baird, and amateurs, and became a bureau of the Government?

The WITNESS. Well, I should say about the commencement of the fiscal year of 1876 and 1877.

Senator SQUIRE. From what year could you readily make out a statement showing the names of employés?

The WITNESS. I can go back to the beginning, if you want it. It is an enormous piece of work, and unfortunately at this time I am badly rusted. It is the end of the fiscal year, and I have my regular work to attend to, and it means going over a great many records.

Senator SQUIRE. We have here, commencing with 1887, four years, you might say, and if we could have a list showing the growth of the work of the Commission and the growth of the expenses connected therewith, as far as relates to these employés, it seems to me when we come to present them to the full committee, as we are bound to do, with this work they will have before them just what they would naturally ask for. If it is impractical to go back to the very beginning, with the time you have we should have some such statement.

The WITNESS. I have not the time at present unless I drop everything else, and that would throw other work behind and I can not well go ahead at this. This is a bad position now; this is the end of the fiscal year and I have to look out carefully to see that our appropriations are not exceeded in any way, and the work has got to be kept up.

By Senator SQUIRE:

Q. Was there a Mrs. Smith in your office?—A. Yes, sir; she is my sister-in-law.

Q. She received a salary of \$800?—A. She received a salary of \$780, I think it was.

Q. When did she leave your office?—A. She left last October.

Q. Who succeeded her?—A. My sister, Miss Caroline E. Gill.

Q. Is she still in the employ?—A. Yes, sir; she is still here.

Q. She received a salary of how much?—A. \$600 a year.

Q. Was she appointed by Colonel McDonald at your request?—A. At my request, sir.

Q. Do you know where Miss A. N. Smith was born?—A. In Louisiana.

Q. Do you know how long she lived in that State?—A. She lived there till driven out by the war when a young child.

Q. Where has she since resided?—A. She has since resided a part of the time in Pennsylvania, and in Washington the best part of her life. Senator Gibson was her friend at the time, and endeavored to get her into one of the other Departments.

Q. He requested her appointment here?—A. No, sir; not here. It was after she failed to get into the other Departments here that I asked Professor Baird to appoint her at \$45 a month.

Q. She was appointed by the professor?—A. She was appointed by the professor; yes, sir.

Q. Was Miss Gill appointed by Professor Baird?—A. No, sir; as I stated before, by Colonel McDonald, at my request.

Q. Do you know the amount of the salaries of the employés of your office?—A. It has been stated that the expense of my office, of the disbursing office, was about \$6,000 a year. That is approximately correct, but it includes the salaries and includes any special equipment for the office outside of stationery.

Q. How much do the salaries amount to?—A. The salaries amount now to about \$465 a month.

Q. How much a year?—A. That would be \$5,680; and occasionally I have extra help, but that is temporarily.

Q. How much would that amount to additionally?—A. That all included would bring the expenses of the office up to about \$6,000 a year.

Q. Are the accounts, the various accounts, the pay accounts and accounts for purchase of material and all that, audited in your office?—

A. Yes, sir.

Q. You act as auditor and disbursing clerk?—A. Yes, sir.

By the CHAIRMAN:

Q. Do you know anything about the purchase of the yacht *Wavie*?—

A. I do, sir.

Q. Was her purchase advertised for?—A. No, sir, if the committee will excuse me I will get the vouchers. I have some papers there that will show, perhaps. She was not advertised for in the newspapers. The vessel was needed badly, I understood, and to take and draw plans for a specific kind of vessel and then advertise for bids to construct that vessel would have taken a long time, and accordingly Mr. Bayley, who is the engineer of the Commission, was directed by the Commissioner to make inquiries to see for what he could get a suitable vessel. He was sent on to New York and visited quite a large number of ship brokers, I believe, and inspected a large number of vessels, and selected this boat *Wavie* as being the best that he could obtain within the sum limited by the Commissioner.

Q. What was that sum?—A. Four thousand dollars.

Q. And she was purchased?—A. She was purchased for the sum of \$3,400.

Q. Purchased at a private sale?—A. Yes, sir.

Q. Do you know how much was expended for fitting her up for the use of the Commission?—A. There was, I should say, probably—I do not know the exact figures, but there were several hundred dollars expended, which was necessitated by the change of work.

Q. As much as \$500?—A. Less than \$500, I think. I doubt if it was more than two or three hundred dollars.

Q. Is there authority in the law governing such matters for the purchase of a boat at private sale?—A. The law requires, when the exigencies require the immediate purchase of articles, that those articles may be procured in open market, and according to methods generally adopted by business men—that is, due care shall be taken. I suppose by that that the advertisement in papers is waived, but it does not mean that one shall simply go into a place and buy anything they see, but to exercise the same care that they would exercise were they purchasing it for themselves.

Q. Were there any advertisements inserted in any papers that the Commissioner wanted to purchase such a boat?—A. No, sir. New York City is a great mart for steam crafts of all kinds. People build their boats and use them perhaps a little while, then they get tired of them or find they cost too much, and are willing to dispose of them, and in that way one is often able to get an extremely valuable boat for a small amount of money.

Q. The Commission has three vessels?—A. The *Albatross*, the *Fish Hawk*, and the *Grampus*, which is a schooner, and a number of launches, but only three large vessels.

Q. You do not know how many launches?—A. No, sir; I do not know.

Q. Approximately?—A. Well, I should say we had five or six launches.

Q. Have the launches averaged in cost about the same that this one did, or more or less?—A. Well, I should say that they averaged more, for the class of vessels. One launch we paid \$4,000 for, and then there are several launches on the vessels that cost different sums of money.

Q. Do you know whether Mr. Bayley calculated that he got a good bargain on this vessel?—A. From what he told me I should think it was a good bargain. He told me the vessel was a cheap one and a good one, and undoubtedly that the price paid was a much less price than the Commission could have contracted for a launch of similar construction.

Q. Was there any hurry for purchasing her?—A. Yes, sir; they wanted to use it in the shad work. They are using her on Long Island Sound now in special investigation.

Q. How have the other ones been purchased; in the same way?—A. In the same way; yes, sir. A Herreshoff launch of course could be bought only from the Herreshoff Company.

Q. Have you the vouchers connected with this launch?—A. Yes, sir.

Q. If you can put your hands on them you may get them.

The witness procured the vouchers.

Q. Do you find them?—A. Yes, sir.

Q. Have you the bill of sale of the craft?—A. Yes, sir. There is the receipt for the actual check paid. (Exhibiting receipt to chairman.)

Q. Have you the bill of sale of the *Wavie*?—A. Yes, sir. The paper is executed by E. S. T. Kennedy, of the city and State of New York, the consideration being \$3,400, and it is duly acknowledged under date of April 12, 1890, before Joe W. Swaine, notary public for Kings County, New York.

Q. Have you any voucher for the expense of Mr. Bayley in the purchase of the boat?—A. He was paid mileage.

Q. He was paid his necessary expenses over there?—A. He was paid mileage in lieu of all expenses, as a naval officer.

Q. In lieu of all other charges he was allowed mileage according to the Government rule of 8 cents a mile?—A. Yes, sir.

Q. How much would Mr. Bayley's instructions allow him to pay for the boat?—A. Up to \$4,000.

Q. What did he pay for the *Wavie*?—A. Three thousand four hundred dollars.

Q. Is there anything in these papers that would enable you to state how much was expended in fitting her up for the service, the gross sum?—A. For actual alterations and repairs the sum of \$352.90 was paid to the Mechanical Power Company, 456 West 58th street, New York, for work done in accordance with the specifications prepared by the engineer of the Commission.

Q. And was that all the money that was expended in fitting her for the service of the Commission?—A. There was some extra equipment which did not enter into the question of repairs.

Q. Was Mr. Bayley allowed any commission or extra allowance for purchasing this boat?—A. Not to my knowledge.

Q. By the Commission?—A. By the Commission none, and not to my knowledge by anybody else.

Q. This boat was not advertised for, as you have stated?—A. No, sir. After we had taken charge of the boat in New York Harbor an accident happened to it, which does not enter into the other question at all.

Q. Do you know whether this boat was equipped at that time for the use of the Commission?—A. Well, that is out of my line. I can not

say, except that I can say that she was used at Gloucester, New Jersey, on the Delaware, and she is now being used on Long Island Sound in the oyster investigation.

Q. Do you know whether the oyster investigation which is being prosecuted was ordered by special direction of Congress?—A. No, sir; I do not.

Q. You have not seen the boat?—A. No, sir.

Q. Do you know whether this boat was a good purchase and suitable for the use of the Commission?—A. No, sir; I do not.

Q. Do you know whether she was a second-hand boat?—A. She was a second-hand boat, about a year old, from Mr. Bayley's certificate.

Q. That appears from the papers?—A. Yes, sir.

Q. Do you know what the appropriation was for the erection of the Leadville Station?—A. Fifteen thousand dollars.

Q. Do you know whether that appropriation was exceeded in the construction of the station?—A. Two calls for bids became necessary before the matter of the construction of the hatchery at Leadville, Colo., could be undertaken. The first call resulted in but one bid, submitted by Jeremiah Erwin and Eugene Robitaille, of Leadville, Colo., whose bid was \$15,555.78 for the entire work.

Q. Was that bid accepted?—A. No, sir.

Q. Was there a re-advertisement?—A. There was, sir. In the first place, there was but one bid, which did not permit the proper competition, and it was therefore rejected and re-advertisement was made. Here is a letter which I prepared at the time to the acting Commissioner.

Q. Did you re-advertise?—A. Re-advertisement was made.

Q. What bids did you receive?—A. Re-advertisement was made calling for bids to be opened on September 20, 1889. The call was for August 10, 1889, and three bids were received. L. G. Hunt, of Leadville, bid \$12,672; Jeremiah Erwin and Eugene Robitaille bid \$14,292.60, which was considerably less than their first bid, and George Baldwin and W. W. Chronister bid \$8,743.

Q. Were any of those bids accepted?—A. The bid of L. G. Hunt, at \$12,672 was accepted.

Q. Was he the lowest bidder?—A. He was not the lowest bidder. Inquiry was made and determined that he was the most responsible. Calculations had been gone into and it was found that the lowest bidder could not build the building in accordance with the specification for any such sum of money, and as it now turns out the present contractor, even at a higher figure, claims he has been under considerable loss from the acceptance of the contract.

Q. Then the building was constructed by the contractor for a sum within the appropriation?—A. It is not all completed yet. The contract was within the appropriation.

Q. Did not that cover the entire completion of the building?—A. It covers the entire completion of the building, but not the equipment in any way.

Q. The appropriation did not cover the equipment?—A. No, sir.

Q. The building was constructed within the amount of the appropriation?—A. Yes, sir.

Q. How much did it cost for equipping the station?—A. The place is not equipped yet; it is only partially equipped. A temporary structure and an additional structure, in order to enable the last season's work to be started, was put up by the purchase of material and the employment of day labor.

Q. So as to take advantage of the season?—A. So as to take advantage of this season.

Q. Have any moneys been expended at this Leadville station out of any fund not properly usable there?—A. Not to my knowledge, sir. The station being operated, the expenses of the superintendent and the expenses of the employés there would necessarily be paid from the general appropriation for the work of propagation, and such has been the fact.

Q. Is that the fact with regard to other stations; are they paid out of the general appropriation?—A. Yes, sir.

Q. So you know of no misapplication of funds from one fund to another?—A. No, sir.

Q. In the construction of that work?—A. No, sir.

The appropriation for the station at Leadville, Colo., is worded as follows:

Fish hatchery in Lake County, Colo.: For the construction of a Government trout breeding and distributing station in Leadville, Colo., \$15,000. (U. S. Statutes 25, page 954.)

There (exhibiting) is the contract made between Lyman G. Hunt, of Leadville, Colo., and Marshall McDonald, as Commissioner of Fish and Fisheries, dated October 14, 1889, for the construction of the fish hatchery for the United States Fish Commission near Leadville, Colo., for the sum of \$12,672.

Q. They completed their contract?—A. It is not quite completed yet.

Q. And they are not fully paid?—A. And they are not fully paid.

Q. Have you any reason to think that they will fail to complete their contract?—A. No, sir; I think they are going ahead with it. It is simply a matter of delay by reason of the weather, and it has been excused.

Q. Do you know whether the building has been inspected?—A. It has been inspected there by the superintendent.

Q. It is a good building?—A. I suppose so; I have not seen it.

Q. You have heard of no complaints?—A. I have heard of no complaints.

Q. Were full and particular specifications furnished to this contractor previous to exhibiting his bid?—A. Calls for proposals for the construction of a fish hatchery at Leadville, Colo., were duly inserted in several newspapers of Colorado.

Q. According to certain specifications?—A. Yes, sir; and the parties were informed that full specifications and particulars could be obtained either by addressing the Commissioner or by applying at the office of Messrs. Orahod & Teller, at Colorado, and the bid of each bidder was attached to the specifications.

Q. What time was a copy of the contract filed with the Comptroller?—A. The contract was dated by Mr. Hunt, in Colorado, on October 14, 1889, and I have a letter, or the Commissioner received a letter rather, from the First Comptroller of the Treasury, under date of October 24, 1889, stating that the contract had been received and approved, and was filed in his office.

Q. Why was not the bid of the lowest bidder accepted?—A. The bid of L. G. Hunt, of \$12,672, and also the bid of Messrs. Erwin & Robitaille, were for the entire work. The bid of Baldwin & Chronister was for the carpenter work, including plumbing and painting, but not including the stone-work, of which a very large part of the building is composed. So that of the two bids for the entire work alone, it can be considered that the lowest bidder received the contract.

Q. The lowest bidder for the entire work received the contract?—A. Yes, sir.

Q. Had there been any of this sum of \$15,000 which was appropriated for the construction of this hatchery used before this contract was made?—A. There was.

Q. For what purpose?—A. For the preparation of plans and the payment of advertisements.

Q. For the selection of a site?—A. No, sir; that is a Government reservation.

Q. If you can state how much of this \$15,000 was expended in preparing plans and advertising, I would be glad to have you do so?—A. Two hundred and eleven dollars and thirty-five cents was paid for the survey of the property in July, 1889, which was the first expenditure.

Q. What was the necessity for that survey?—A. In order that the Land Office could be properly advised for the preparation of the papers, and so that the President could set aside the ground by proclamation.

Q. Did it involve any question as to survey of the supply and fall of water?—A. I can not tell you, sir. I was mistaken when I said before that there were no expenses in connection with it. Mr. Gay had some expenses in going out and examining that station and getting the work done in July, too.

Q. Give the amount of that?—A. Ninety-eight dollars and thirty-six cents. There were \$35 paid for drawing up and typewriting a large number of the specifications. One hundred and seventy-five dollars was paid for the preparation of the specifications and plans.

Q. Give the amount paid for advertising for bids?—A. As I stated before, on the first advertising for bids for the construction of this building, but one proposal was received, which was deemed exorbitant, and a second call was issued. These calls were issued in the Rocky Mountain News, of Denver, and the Times, of Denver, the Leadville Chronicle, and the Denver Republican.

Q. Do you know the cost of those advertisements; how much was paid?—A. Between \$85 and \$90.

Q. And the sums you have stated as having been paid out of this appropriation for a survey for the general selection of the location and for the advertisements and the preparation of specifications are the only amounts and the only bills which were paid?—A. And the service of the inspector for a part of the time.

Q. That was charged up to that appropriation?—A. Yes, sir; it was charged up.

Q. How much was that?—A. For the month of November Mr. Robinson and Mr. Sauerhoff were sent out there and put directly in charge of that work before any specific propagation work could be done, so it was properly charged to the appropriation for the establishment of the station.

Q. How much was that amount?—A. Two hundred and fifty dollars in that case, and I think that was all that was put there.

Q. That left nothing of the \$15,000 appropriated to pay for the construction, according to the contract?—A. Yes, sir; after the payment of these bills. There is now, though, a small deficit of about \$300; insufficient to meet the final payment which is not yet due. That was occasioned by reason of putting this extra building there.

Q. This temporary building?—A. Yes, sir; which is properly chargeable to the station, and I understood that it was only done after seeing one of the gentlemen in Washington connected with Colorado on his assurance that a further appropriation would be made it was authorized.

Q. What was the necessity of the construction of a temporary building?—A. In order to go ahead with the work at once. It is a building that can be used.

Q. Did it save one year's work?—A. Yes, sir; one year's time there.

Q. Do you know the expense of these temporary buildings?—A. I should say in round numbers it is between \$1,000 and \$1,200.

Q. Would those buildings be of any value to the station after the completion of the main building?—A. I understand they will. I do not know of my own knowledge.

Q. Has there been any money asked for on account of the Leadville Station to meet the deficiency for expenses at that place for the next fiscal year beginning July, 1890?—A. An additional appropriation not specifically to meet those expenses, but for the further development and equipment of the station has been asked.

Q. Do you know the amount of that?—A. No, sir; but I can tell in a moment. "An appropriation for the completion and equipment of the Government trout breeding and distributing station in Lake County, Colo., authorized by the act of Congress approved March 2, 1889, \$25,000." That item was introduced by Senator Teller in the United States Senate on January 20, 1889, and the report was also printed in the Miscellaneous Documents No. 52.

Q. Does that state how much is needed for the completion of the building?—A. No, sir.

Q. There is nothing in the reprovding for a deficiency for the construction of the building?—A. No, sir.

Q. Still you say there will be a small deficiency?—A. There will be a small deficiency.

Q. Do you know of about how much?—A. About \$300.

Q. That relates to the equipment and all?—A. Yes, sir.

Q. I will ask you again: Can you state the object of the temporary building?—A. To take advantage of the last year's season—that of 1889.

Q. Can that building be used to advantage in the future?—A. I am informed by the Commissioner that it can be used as a nursery for fry.

Q. After the completion of the main hatchery?—A. Yes, sir.

Q. Have you seen articles published in the newspapers charging favoritism on the part of the Commissioner towards different employés here?—A. I have, sir.

Q. That he has his favorites and pets and those who are not in favor with him?—A. Yes, sir.

Q. What has been your observation upon that point?—A. Well, I can not say that I have seen any special favoritism. Referring to the names that have been mentioned in the papers and the more prominent names, I should say if increased duties assigned indicates favoritism then favoritism has been indulged in.

Q. Those increased duties usually carried an increase of pay?—A. Yes, sir.

Q. It has been charged that employés here came and went with a good deal of irregularity, that they were not here promptly according to rules, and that many times they left early without leave and that they were gone at noon for a longer time than they should be for lunch. What can you state in regard to that?—A. I can only state in regard to my office, that they are there promptly on hand and are not always ready to avail themselves of clearing off at 4 o'clock, often being required to stay after that and are willing to remain after when requested.

Q. Do they receive any extra pay for that extra work?—A. No, sir.

Q. Do you know of any persons who have been employed in the Commission by Commissioner McDonald who are relatives of his, or his wife, or some connections?—A. I have heard it stated, and I believe there are some two or three gentlemen who are connections in some way. Whether they are relatives I could not say.

Q. Who are they?—A. They are C. C. Lewis, R. E. Lewis, and Francis McCormick; all young men.

Q. What are their positions?—A. Their positions are of the lower grades, generally.

Q. Do you know what their pay is?—A. C. C. Lewis is now assigned the Wytheville (Virginia) Station at a salary of \$75 a month; Francis McCormick and R. E. Lewis are employed in the offices at Washington at a compensation of \$50 a month each.

At 2.30 o'clock p. m. the subcommittee adjourned to meet at the call of the chairman.

WASHINGTON, D. C., *July 8, 1890.*

The subcommittee met at 10.30 o'clock a. m., pursuant to call of the chairman.

Present: Senators STOCKBRIDGE (chairman) and SQUIRE.

TESTIMONY OF R. E. LEWIS.

R. E. LEWIS, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What is your name?—A. R. E. Lewis.

Q. Where do you reside?—A. In Washington.

Q. Are you in the service of the Fish Commission?—A. Yes, sir.

Q. How long have you been connected with the Fish Commission?—

A. I entered on the 1st of February, 1889; that is, on the permanent roll. I was in the temporary service in May, 1887, and also in July, on the Cincinnati roll, at the time the exposition was made there during the centennial of the Ohio Valley.

Q. By whom were you appointed?—A. I was appointed by Colonel McDonald.

Q. When you were on the temporary roll?—A. Yes, sir.

Q. What are your duties? What position do you occupy?

The WITNESS. Now?

The CHAIRMAN. Yes, sir.

A. Clerk.

Q. In what office?—A. During the last winter I was in the office of the inspector of stations, and in April I was transferred to Fort Washington as record clerk. At present I am working in Mr. Gill's office.

Q. What is your age?—A. I will be twenty-one on the 17th of September, coming.

Q. Are you related in any way to Commissioner McDonald?—A. No, sir; not to Colonel McDonald. My brother married a sister of Mrs. McDonald, and a sister of mine married a brother of Mrs. McDonald.

Q. You are doubly connected by marriage with Mrs. McDonald?—A. Yes, sir.

Q. What salary did you get when you were first appointed?

The WITNESS. On the temporary roll?

The CHAIRMAN. Yes, sir.

A. Forty-five dollars a month in the messenger service.

Q. Then was your salary increased?—A. On the Cincinnati roll I got \$50. When I went on permanently I got \$40 a month.

Q. What is your compensation now?—A. Fifty dollars. When I first went on the Fish Commission on the permanent roll I was only employed on the first floor as an usher to show visitors around.

Q. Did you go to Alaska on a trip last summer?—A. Yes, sir.

Q. Who comprised the party?—A. Dr. Bean, who was chief of it, Livingston Stone, and Mr. Booth.

Q. In what capacity did you act?—A. I was general assistant, rodman, stenographer, and clerk, and helped him in gathering fishery statistics and taking photographs, and securing what information could be obtained about the salmon fisheries of Alaska.

Q. Did you do considerable work as rodman?—A. They surveyed the Karluk River for about 4 miles above the village of Karluk, which is right at the mouth of the Karluk River. Then, besides that, they surveyed the spit, the narrow spit on which is located the canneries, which are there for the purpose of canning salmon.

Q. What compensation did you receive when upon that trip?—A. Forty dollars a month.

Q. Do you know of any other persons besides yourself who are related or connected with Commissioner McDonald or his wife, who are employed in the Commission?—A. I know McCormick. He is the only one I know.

Q. What is his relationship to the Commissioner?—A. He is not related to the Commissioner. He is a nephew of his wife.

Q. A nephew of Mrs. McDonald?—A. Yes, sir.

Q. At what time do you report for duty in the morning?—A. Nine o'clock.

Q. What time do you leave?—A. At 4, although we do not always get there on time, generally five minutes late, but we very seldom leave there until some minutes after 4.

Q. Are you in the habit of taking quite a recess at noon?—A. From a half an hour to forty minutes, something of that sort.

Q. What is your observation as to employés; are they on hand promptly, and do they remain until office hours are up?—A. Yes, sir.

Q. That is the general rule?—A. Yes, sir; and I think it is strictly observed.

Q. You spoke of being detailed to Fort Washington; was that this last summer?—A. This last spring.

Q. Do you know what was done with the fish taken for spawn?—A. They were sent to market here in Washington.

Q. Do you know what disposition was made of the money received from the sale of the fish?—A. The money is used in defraying the expenses of running the seine. The seine is operated by the Fish Commission, and the proceeds are used in paying the seine haulers and other expenses, such as the seine boat, the fish lighters, and fish tenders.

Q. Do you know whether the amount of money received this year from the sale of fish was sufficient to pay the expenses of operating the seine?—A. No, sir; it was not.

Q. How much did it lack?—A. It lacked \$25 to \$30.

Q. Do you know that that disposition was made of the money?—A. Yes, sir; I know it.

Q. Do you know anything about the use of intoxicating liquors by the employés of Fort Washington?—A. No, sir; there might have been some men who had whisky by themselves, but I never saw a man un-

der the influence of it when I was there. I myself had a little down there in a bottle to make punch with in the morning.

Q. There was no one connected with the Commission who kept liquors of any kind on sale to employés or others?—A. No, sir; I have never seen a glass of liquor or anything of the sort sold there in my life, except from the boat. Men buy it from the boat and drink it right off the boat.

Q. Have you seen various articles published in the newspapers reflecting upon the general management of the Fish Commission?—A. Yes, sir.

Q. In those articles it was charged that there was a good deal of looseness in the central station here; that employés were not held to regular hours of service; and it was also charged that there was a good deal of favoritism, that Commissioner McDonald had his favorites and pets, whom he favored by advancing their salaries and otherwise, and that there were others whom he seemed to be prejudiced against, who could not secure advancement. What is your observation on that point?—A. My observation is just the contrary.

Q. You know nothing of that kind?—A. On the contrary, before I entered the Fish Commission I had been boarding at Colonel McDonald's house for some time. I was at school here a couple of years before I went into the Fish Commission, and I remember quite frequently that Colonel McDonald remarked whenever that subject was mentioned to him that the men he liked the best always had the worst time.

TESTIMONY OF CHARLES E. GORHAM.

CHARLES E. GORHAM, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What is your name?—A. Charles E. Gorham.

Q. Where do you reside?—A. Thirteen hundred and forty-three Q street, Washington.

Q. Are you in the service of the Fish Commission?—A. Yes, sir.

Q. In what capacity?—A. Architect and draughtsman and engineer.

Q. How long have you been in the service of the Commission? When did you enter the service first?—A. I entered permanently in 1883, but before that I had done work for Professor Baird for a number of years, since 1876.

Q. When you entered permanently were you appointed by Professor Baird?—A. Yes, sir.

Q. Have you occupied the same position all the time?—A. Yes, sir.

Q. Has your pay been changed during that term of service?—A. It has been changed from \$150 to \$6 a day.

Q. When was that change made?—A. Two years ago.

Q. By Commissioner McDonald?—A. Yes, sir.

Q. Were your duties increased at the time your pay was increased?—A. Well, no. It amounts to about the same, a little more. It averages \$6 a month more during the year, provided I work all the time.

Q. Do you work all the time?—A. Yes, sir.

Q. Have you steady employment?—A. Yes, sir.

Q. Do you know Mr. E. I. Rogers?—A. Yes, sir; he works in my room.

Q. He is a draughtsman?—A. Yes, sir.

Q. Is Mr. Rogers a skillful draughtsman?—A. He is a very good draughtsman.

Q. Do you know anything about Mr. Rogers being promised an increase of salary and not receiving it?—A. I do not know of his being definitely promised. A year ago I asked the Commissioner to increase his salary. He was working under my observation. The Commissioner said he could not do it just then, but to leave the matter to him; that he would fix it up as soon as he found an opportunity, or something to that effect.

Q. Is Mr. Rogers a relative of yours?—A. He is not.

Q. Do you know a Mrs. Palmer?—A. I know there is such a lady in the Commission, but I am not personally acquainted with her.

Q. Do you know what her duties are?—A. She is under Mr. Scudder; I know she is a clerk there. She is on another floor from me.

Q. You do not know much about her?—A. No, sir.

Q. Do you know Mr. Gay?—A. Yes, sir.

Q. What is your opinion of Mr. Gay's ability and fitness as a constructor of buildings?—A. I do not think he understands architectural work. I do not know that he pretends to.

Q. And as to the practical direction and oversight of the erection of buildings?—A. I do not know very much about that. I have done some work in conjunction with him—the preparation of plans—but I should not call him an architect by any means. He may have some knowledge of construction.

Q. Do you know of expenditures made by him at the Put-in-Bay station caused by his unnecessarily lowering the building there?—A. I do not know anything about it, except from hearsay. Mr. Bayley had charge of that construction, and I had nothing to do with the plans of that at all. I know the building was lowered, but I have not been out there, and I do not know whether it has been an advantage or otherwise.

Q. Have you seen various newspaper articles which have appeared within the last month or so attacking the general management of the Commission?—A. I think I have seen nearly all of them.

Q. You noticed that in those articles it was charged that there was a general lack of system; that there was loose management of affairs, etc. What should you say from your knowledge and observation as to that?—A. I should say that it was to the contrary. I think there has been a very marked improvement since the present Commissioner has been there. I have been there a good many years.

Q. Do you think the business methods pursued are good?—A. They are superior to what they were under the previous administration. I think they are good.

Q. As to the attendance of employés at this Central Station, are they on time in the morning, and do they stay there until the hours are up? I think the hours are from 9 until 4.—A. Yes, sir.

Q. What is your observation as to the promptness of attendance?—A. I think the attendance is good.

Q. It was charged in these newspaper articles, and in fact one witness testified, that the employés seemed to come and go as they pleased; they came late and went early. What is your observation on that point?—A. I do not think they do, as far as I know. I know that if a clerk wants to be away he has to apply to the chief clerk or the head of his division, and it is charged up against him. Even for a half day or several hours he has to be excused.

Q. Do the employés work over hours?—A. Many of them do; they do sometimes. I work a great deal overtime.

Q. Do you get any credit for overtime?—A. Not always. I suppose we do from our immediate chief, but we do not get any pay for it.

Q. One of the charges is that there is a good deal of favoritism, that Commissioner McDonald has his favorites, who have soft places and whose pay has been advanced, and that there are others who do not receive that consideration. What is your observation on that point?—

A. I do not think Colonel McDonald has any marked favorites. He has some men who have been promoted, but I do not think they receive any more than their work entitles them to.

Q. Were they promoted on account of long service and proficiency?—

A. Yes, sir. As a general thing the clerks in the Fish Commission are paid less than in any other Department. I mean those doing merely clerical work. Men who have been there five and six years only receive fifty or sixty or seventy-five dollars a month who would be receiving more in other Departments.

Q. I will read you the resolution of the Senate under which this inquiry is being conducted:

Resolved, That the Committee on Fisheries be, and it is hereby, instructed to make early inquiry into the administration of the affairs of the United States Fish Commissioner's Office, and especially in respect of the changes in the force, compensation paid to employés, and any alleged favoritism or other undue administration, and report to the Senate thereon.

If you have any information on any point embraced in the resolution which I have not drawn out by questions, and which you consider material, the committee would be glad to have you state it in your own way. If you have any criticisms to make on the general management of affairs please do so.—A. I have no criticisms to make. I consider Colonel McDonald to be an efficient and honest officer of the Government.

Q. There has been quite an increase within two years in the number of employés. Do you consider the increase of force employed excessive, considering the increased amount of work done by the Fish Commission?—A. Congress has added new fish stations every year, and there has been a necessary growth and increase. I do not think there are any more clerks employed in proportion to the work done than before; perhaps less. There has been very little increase in the main office, the most of it being connected with the establishment and maintenance of these stations.

Q. Where new stations are established does it necessitate the employment of additional force?—A. They have added six or eight new stations in the past few years.

Q. Have you been at the Leadville Station?—A. No; I have never seen there. I drew the plans and did the architectural work in connection with it. I have been at a number of stations.

Q. I believe you stated that you have never been at the Put-in-Bay Station?—A. No, sir; I have never been there. I have been at nearly all the rest.

Q. Have you been at the Northville Station?—A. Yes, sir.

TESTIMONY OF WALTER ROBERT SAUERHOFF.

WALTER ROBERT SAUERHOFF, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What is your full name?—A. Walter Robert Sauerhoff.

Q. Where do you reside?—A. In Baltimore.

Q. Are you in the employ of the Fish Commission?—A. Yes, sir.

Q. When were you appointed in the Commission?—A. I first went on in 1878.

Q. That was under Professor Baird?—A. Under Professor Baird.

Q. What position did you occupy?—A. Machinist.

Q. What is your present occupation?—A. Machinist.

Q. What was your pay at the time of your employment?—A. Sixty-five dollars.

Q. What is it now?—A. Eighty dollars.

Q. Have your duties been increased?—A. Well, I can not say that they have; in one way, I am in charge of the shop. When I first went on I was in charge of a boat.

Q. You ran a boat?—A. Yes, sir.

Q. Now you are in charge of a shop?—A. Yes, sir.

Q. Was your pay increased when you took charge of the shop?—A. No, sir; whilst I was on the boat.

Q. Are you related to Mr. William P. Sauerhoff?—A. A brother.

Q. Have you ever worked on models of fish-ways or on the McDonald filter during office hours?—A. I have worked on the McDonald filter. I may have worked on the fish-way, some little job, but not to any extent.

Q. In regard to this filter, is it the filter which is being used at the Central Station?—A. Yes, sir.

Q. What sort of work did you do upon it?—A. Some turning and drilling.

Q. Machinist work?—A. Yes, sir.

Q. Is it in successful operation?—A. Yes, sir.

Q. Do you know whether it is a valuable invention?—A. Yes, sir.

Q. It answers the purpose?—A. Yes, sir; it answers the purpose.

Q. Do you know anything about the necessity for having such a filter? The water filtered is used for what purpose?—A. It is used for drinking water and for the aquaria for the fish.

Q. Do you know of any other employes of the Fish Commission besides yourself who have worked on the models or alterations of the filter during office hours?—A. Yes, sir; Mr. Barry, also a machinist.

Q. That work was done regularly, the same as you do any other work?—A. Yes, sir; although not to interfere with other work. That was our order from the Commissioner, not to let that interfere with any other work in the building.

Q. When you were not otherwise employed you did more or less work upon it?—A. Yes, sir.

Q. At what time do you go on in the morning?—A. Eight o'clock, between 8 and 9.

Q. And work until when?—A. Four or 5. Sometimes we work later, as the occasion requires. Sometimes we are required to be there later; all night if necessary.

Q. You put in all your time?—A. Yes, sir.

Q. Did I understand you to say that you were employed in the shop

at Baltimore?—A. I am employed in the shop here, and live in Baltimore.

Q. Have you seen some newspaper articles published within the last month or so reflecting upon the general management of the office here?—A. I saw one or two.

Q. It was charged in those articles that the general management was loose; that employes came late and went early, and did not put in steady work. What is your observation or knowledge on that point?—

A. I think they do what is right and make all the time they are called on to make. In our machine-shop we have two launches, the station at Fort Washington, besides the work done in the building and the carp ponds. We are necessarily called in to go in and out from those places.

Q. That is in the regular way of your duties?—A. Yes, sir.

Q. It has been charged that the Commissioner had pets and favorites whom he favored, giving them easy work and advanced pay, etc., while others he did not seem to care so much about. Can you say anything on that point?—A. No, sir.

Q. Nothing of that sort has come under your observation?—A. No, sir.

Q. Are there more men employed in your department now than during Professor Baird's administration of the office?—A. There may be in this building at present, but they have only been taken from other places and brought here.

Q. Were they brought here on account of an extra amount of work to be done?—A. Yes, sir.

Q. Of what sort; in connection with what?—A. We have two launches here. We did not have them at that time. We have stations that we had not then. We do work here at the building that was not done before.

Q. Have you anything to state generally touching this matter that we are directed to inquire into under the resolution of the Senate? What would you say generally as to the general management of affairs? Is it systematic and business-like, or is it loose and careless?—A. I should say it was carried on very systematically, so far as I can see; so far as it comes under my own eye. Outside I could not say.

TESTIMONY OF CHARLES W. SCUDDER.

CHARLES W. SCUDDER, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What is your name?—A. Charles W. Scudder.

Q. Where is your residence?—A. I live at Takoma Park.

Q. You are employed in the Fish Commission?—A. Yes, sir.

Q. In what capacity?—A. As record clerk.

Q. Have you read certain articles published in various newspapers, the New York Press particularly, reflecting upon the general management of the Commission?—A. I have; they all pass through my hands.

Q. You remember that in those articles it was charged that the Commissioner had relatives of his own and of his wife in the employ of the Fish Commission here. What do you know as to that?—A. I know only what they tell me, that there is only one; one nephew of his wife.

Q. What is his name?—A. McCormick. I do not know his initials.

Q. Do you know Mr. Lewis? Is he not a relative?—A. I know him. I do not know how that is. I never heard him say anything about it.

Q. So that as far as you know McCormick is the only relative of Mr. or Mrs. McDonald who is employed in the Fish Commission?—A. Yes, sir.

Q. Is he a competent person in his position?—A. He is not in my office, and I do not know anything about his work.

Q. Have you a brother employed in the National Museum?—A. Yes, sir.

Q. How long have you been in the employ of the Fish Commission?—A. I first went on the Commission December, 1882.

Q. By whom were you appointed?—A. Professor Baird.

Q. What position did you occupy then?—A. As clerk under Mr. Smiley.

Q. What was your pay then?—A. Seventy dollars a month.

Q. What position do you now occupy?—A. Record clerk.

Q. What is your present compensation?—A. One hundred dollars a month.

Q. Are your duties more arduous and responsible in the position you now occupy than in the one you formerly occupied?—A. Certainly. I have charge of all the records and am responsible for any records that may be wanted, so that I can get them.

Q. Correspondence and business records and everything of that sort?—A. Everything of that kind.

Q. When was your pay increased?—A. It was first increased in 1884 to \$83 $\frac{1}{3}$ a month—a thousand dollars a year.

Q. That was under Professor Baird?—A. Yes, sir; on Mr. Smiley's recommendation.

Q. Upon Mr. Smiley's recommendation?—A. Yes, sir.

Q. Were you in Mr. Smiley's department at that time?—A. Yes, sir.

Q. When was the next increase?—A. I have some papers here which, if you will allow me to look at, I can answer precisely [consulting papers]. There is the first letter of Mr. Smiley's recommending my promotion.

The letter is as follows:

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., June 26, 1884.

DEAR SIR: It is with much satisfaction that I can report the constantly increasing efficiency of Mr. C. W. Scudder's work. I am now able to accomplish very much more in the division than two years ago, and you are aware that our opportunities for work have been constantly increasing. However, the satisfaction of increased usefulness makes this fact a welcome one. In many ways which you have doubtless observed, and in many not so prominent, Mr. Scudder has contributed to this efficiency. With the beginning of the fiscal year, 1884-'85, I feel that it would be proper to advance his salary to \$83 $\frac{1}{3}$ per month, and so respectfully recommend. Please accord your usual, kind consideration to the matter.

Very truly,

CHAS. W. SMILEY,
Division of Records and Publications.

Prof. S. F. BAIRD,
Commissioner.

(Across the corner in ink:) Recommended. Herbert A. Gill.

(Across the face in red:) Asks Mr. Scudder's salary be increased to \$1,000 per annum.

(Stamped in red:) U. S. Commission of Fish and Fisheries, Division of Accounts, June 30, 1884. Herbert A. Gill, D. A.

The WITNESS. The notification of Professor Baird to me is attached thereto.

The letter is as follows:

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., June 30, 1884.

DEAR SIR: On the recommendation of Mr. Smiley, who commends very highly your efficiency in his division, I take pleasure in informing you that your compensation will be increased from the 1st of July to \$83½ per month.

The disbursing agent of the Commission has been instructed accordingly.

Very respectfully,

S. F. BAIRD,
Commissioner.

CHAS. W. SCUDDER, Esq.,
Division of Records, U. S. Fish Commission, Washington, D. C.

The WITNESS. My next increase was in July, 1885.

Q. Still under Professor Baird?—A. Yes, sir. Here is the recommendation of Mr. Smiley. He recommends in that that I have a hundred dollars. I was increased to \$90. There is another increase of \$1.66 a month, and this last increase was on the recommendation of Mr. O'Connor, the chief clerk, which was last July, a year ago.

The letter of Mr. Smiley referred to above is as follows:

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., June 25, 1885.

DEAR PROFESSOR: With the close of the fiscal year I feel called upon to report the general efficiency of my assistants and to recommend them to such advancement financially as you may find in harmony with your plans for 1885-'86.

Mr. Scudder has had added responsibility since January 1 in the matter of mailing, and you have had opportunity to know of his value in this respect. I think he should rank at least as a first-class clerk at \$100 per month if you have the means to place him at that rate.

Mr. Latimer and Mr. Davidson have been monthly growing more efficient during the year and may properly be advanced from \$50 per month to \$60 per month, in my judgment.

I would also recommend the advance of Parker's salary from \$25 to \$30 per month.

Very respectfully,

CHAS. W. SMILEY.

Prof. S. F. BAIRD,
Commissioner.

(Indorsed:) Asks salaries of his assistants be advanced.

(Stamped:) Commission of Fish and Fisheries, Division of Accounts, July 20, 1885.
Herbert A. Gill, D. A.

Professor Baird's notification to Mr. Scudder is as follows:

U. S. COMMISSION OF FISH AND FISHERIES,
Woods Holl, Mass., July 20, 1885.

DEAR SIR: Upon the recommendation of Mr. Smiley, I have decided to increase your compensation to \$90 per month, to take effect from the 1st instant.

Very respectfully,

S. F. BAIRD,
Commissioner.

CHAS. W. SCUDDER,
U. S. Fish Commission, Washington, D. C.

Q. It has been charged in some of these newspaper articles that employés at the Central Station came late and left early, and were away a long while at noon, and generally that they came and went about as they pleased. What can you say on that point?

The WITNESS. Do you mean at the general office?

The CHAIRMAN. Yes, sir.

A. Well, I have not seen anything of that since—well, for a year back I have not seen any loafing or lounging around. Of course people speak civil words as they go by.

Q. Is it your observation as a rule that employés are on time and remain until 4 o'clock or after?—A. Yes, sir. I get there at a quarter of 9, and do not leave until ten or fifteen minutes after 4. Before I was transferred from Mr. Smiley's office the employés under Mr. Smiley were obliged to wait for him to come in to do his work in the morning.

Q. Do you mean that he was not there at 9 o'clock?—A. He was not there at 9 o'clock; in fact, he seldom was there before 10.

Q. And you had to wait his coming?—A. Yes, sir; and not only in the morning, but in the afternoon, he would be absent for an hour or two. If we ran out of work during his absence we would have to wait until his return.

Q. You had to amuse each other?—A. We tried to help each other as much as possible, but sometimes we all ran out at once and we had to wait until he returned.

Q. It was charged in these newspaper articles in a general way that there was a good deal of favoritism exercised, that Commissioner McDonald seemed to have his favorites, whose salaries would be apt to be advanced, and whom he favored in various ways, while others were treated quite differently. What is your observation on that point generally?—A. I have not seen any favoritism. Some persons who have worked out of office hours have been promoted. If favoritism consists in promoting persons who work night and day perhaps that is so. During last summer, after I was advanced, I had to take work home at nights to perform to get through with it.

Q. You had more work than you could do during office hours?—A. Yes, sir. Dr. Bean, who was editor, was away in Alaska. I was his assistant and had to look out for the editorial work during his absence, and that work I had to take home at nights to do.

Q. Did you receive extra pay for that?—A. No, sir.

Q. Is it the rule where employés are called on for extra hours of work to give them extra pay?—A. No, sir; I do not think so.

Q. If you have any knowledge on subjects embraced within the resolutions of the Senate which we have not drawn out by questions, we would be obliged to you if you would state it in your own way.—A. No, sir; I have no knowledge.

I noticed in the articles that Mr. Smiley charged me with incompetency, and I want to show that he put me in charge of his division during his absence. I therefore submit several letters on the subject.

The letters are as follows:

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., May 9, 1883.

DEAR PROFESSOR: I respectfully request leave of absence for to-day and to-morrow. I have designated Mr. Scudder to take charge of the division if I am absent.

Yours truly,

CHAS. W. SMILEY.

Prof. S. F. BAIRD,
Commissioner.

Approved.

S. F. BAIRD.

(Indorsed :) Request leave of absence for May 9 and 10; Mr. Scudder to take charge of the division.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., May 9, 1883.

Dear Mr. SCUDDER: During my absence to-day and to-morrow please act as chief of division of record.

Yours truly,

CHAS. W. SMILEY.

(Indorsed :) During absence Mr. Scudder to act as chief of division of record.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., August 9, 1883.

DEAR PROFESSOR: I have decided to try and get off to the American Association meeting which opens at Minneapolis the 15th. I will need to leave here Sunday or Monday next. Everything is in pretty good condition here, and Mr. Scudder will be in charge during my absence. Mr. Snell wishes to be away while I am gone, which will be convenient.

Please indicate your approval of this arrangement if it meets with your wishes.

Yours truly,

CHAS. W. SMILEY.

(Indorsed:) Leave for American Association meeting at Minneapolis Monday next. Mr. Scudder will be in charge.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., August 22, 1884.

DEAR PROFESSOR: I am suddenly called away by the death of an uncle in Maine, whither I shall proceed at once. I purpose going from there to Montreal. I shall return to Philadelphia by September 3. If the office affairs require me then I will proceed to Washington, but shall probably return to Philadelphia for a few days of the A. A. S. Mr. Scudder will be in charge during my absence.

Yours, truly,

CHAS. W. SMILEY.

Prof. S. F. BAIRD,
Commissioner.

(Indorsed:) Suddenly called away by death of an uncle in Maine. Shall visit Montreal; return to Philadelphia by September 3. Mr. Scudder in charge during absence.

TESTIMONY OF FRANK McCORMICK.

FRANK McCORMICK, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What is your name?—A. Frank McCormick.

Q. Your residence is in Washington?—A. In Washington.

Q. Are you in the employ of the Fish Commission?—A. I am.

Q. When were you appointed?—A. I was appointed two years. I have been in the Fish Commission two years and three days.

Q. By whom were you appointed?—A. I think I was appointed by Professor Rathbun.

Q. Who is he?—A. He is the assistant in charge of the division of scientific inquiry. He recommended me for appointment. Of course I suppose the appointment was made by Commissioner McDonald.

Q. Are you related to Commissioner McDonald?—A. No, sir; except by marriage. Colonel McDonald is my uncle by marriage. Mrs. McDonald is my father's sister.

Q. She is your aunt?—A. Yes, sir.

Q. What were your duties when first appointed?—A. The same as they are now—copyist and messenger.

Q. What was your compensation when appointed?—A. I received \$40 a month.

Q. And that salary was increased?—A. I think about a year afterwards I received \$50 a month, an increase of \$10 a month.

Q. Was the compensation of other persons occupying the same position increased at the same time?—A. Yes, sir; I am the only copyist and messenger in Mr. Rathbun's room. Mr. Hinrichs and I both received the same compensation. His salary was increased to \$60 a month and mine to \$50.

Q. Were your duties increased? Why was that increase made?—A. I do not know.

Q. Were your duties increased?—A. No, sir; I can not say they were.

Q. What is your present salary?—A. Fifty dollars a month.

Q. What time do you report in the morning?—A. Nine o'clock.

Q. What time do you leave?—A. Four o'clock.

Q. Do you arrive there promptly in the morning at 9 and stay until 4?—A. Of course we are a little late now and then, but we never leave the office before 4 o'clock, except Saturday evening, which is 3 o'clock.

Q. Is that the rule, that you are there after 9 o'clock, or is coming after 9 o'clock the exception?—A. Nine o'clock is the hour.

Q. And you are usually there?—A. We are very often about five or ten minutes late.

Q. Your duties have been at this station all the time?—A. Mr. Rathbun's office used to be in the Smithsonian Institute, when I was first appointed. After the old Armory building was fitted up we all moved down there and have been there ever since.

TESTIMONY OF NEWTON W. SIMMONS.

NEWTON W. SIMMONS, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What is your name?—A. Newton W. Simmons.

Q. Where do you reside?—A. I make my home in Washington, but most of my relatives are at Wilmington, Del.

Q. Are you connected with the Fish Commission?—A. Yes, sir.

Q. How long have you been in the service of the Fish Commission?—A. I came on in 1878. I did some work for the Fish Commission in conjunction with the State of Maryland in 1878, May until June. Then I came back in 1879 and was paid by the Government, but that was only temporarily.

Q. You were appointed by whom?—A. By Professor Milner. He was in charge of the work then. He was the fish culturist, stationed at Havre de Grace at the time I was appointed.

Q. What was your compensation?—A. Two dollars per diem.

Q. What were your duties?—A. Messenger, and distributing fish and attending to distribution work.

Q. On cars?—A. They had no cars at that time. We were traveling in baggage-cars. There has been an improvement since then.

Q. Has your compensation been increased since you first entered the service?—A. I was increased from \$2 to \$2.50 per diem, and then \$90 per month, and my present compensation is \$100 per month.

Q. When was your compensation increased to \$100 a month?—A. In 1885.

Q. That was under Professor Baird's administration?—A. Yes, sir.

Q. It remains the same?—A. Yes, sir.

Q. Is that what is paid others who have charge of cars?—A. Yes, sir; my present duties.

Q. What do you do when you are not off on the cars?—A. We are about nine months in the field doing car work, and when not engaged in that I go into the office.

Q. What do you do in the office?—A. Clerical work.

Q. Are you employed in the office at this time?—A. At present.

Q. What hours do you observe in your office?—A. Nine until 4.

Q. Are you there during that time?—A. Yes, sir; taking out a half hour or three-quarters for lunch. Sometimes I leave, and sometimes I do not; just as I feel disposed.

Q. Have you seen some newspaper articles commenting and criticising the management of the Fish Commission?—A. I have.

Q. You perhaps remember that in these articles it was charged that there has been a very large increase in force under Colonel McDonald. Do you know anything about that?—A. I think there has been. I think that is owing to the work demanding it.

Q. Has the work of the Fish Commission increased?—A. Very much. I think it has improved very much under the present administration, and that it is conducted in a very systematic manner.

Q. You distribute more of fish and to more points?—A. Yes, sir; and make more mileage, and the work in every respect has increased very much, so far as I know, on the work I am engaged in.

Q. Tell me about this: You go off with a car and distribute fish; do you live on the car?—A. Yes, sir; and we buy our subsistence. They furnish the cook.

Q. The Government furnishes the cook?—A. Yes, sir.

Q. And you live in a mess?—A. We have a mess.

Q. Does the Government furnish any wine and cigars?—A. No, sir.

Q. Have you ever known of invited guests on such trips and having wine and cigars, etc., furnished by the Government?—A. No, sir.

Q. If anything of that sort had been done would you have been apt to know it?—A. On my car.

Q. And you would have been apt to have known it if it had occurred on other cars?—A. Yes, sir.

Q. How many cars are employed by the Commission?—A. Three.

Q. It has been charged in these articles that Commissioner McDonald exercises a good deal of favoritism, that he advances the pay of certain employés and not of others doing the same work, and that he has in various ways exhibited favoritism among employés. Have you any knowledge on that point?—A. I know there have been some promotions, but I think they have been in the line of civil service. Persons have learned more about their work, and deserved it.

Q. Is there a percentage of loss of young fish in transportation?—A. Yes, sir; a small percentage. It depends upon the length of the trip and the condition of the fish.

Q. During the last two years, how has that percentage of loss compared with former years?—A. I think it is very small, to my knowledge; that is, the work I have been engaged in. We have made some very successful trips.

Q. Please state the usual number of young fish taken out in a car.—A. What kind? We distribute several kinds of fish—shad, trout, and whitefish. The usual capacity of a car is a million to two million shad and about as many white fish—a little more of whitefish—about two million to two million and a half.

Q. Do you make any difference in the number of fish which you take on a car on account of the length of the trip?—A. All these fish that we send out are to fill orders; are to fill applications which have been made. It depends on the size of the order. We carry out the number of fish to supply these orders.

Q. Do you usually take about all you can take in a car?—A. Yes, sir.

Q. What is the average number?—A. Shad, from 1,000,000 to

2,000,000; whitefish, about 2,000,000 to 2,500,000; and trout, about 10,000. It depends on the size of them.

Q. Have you made any trips for the distribution of shad this year?—

A. Yes, sir.

Q. How many trips have you made this year?—A. Two or three this year. I did not get back until very late, and the season was very nearly over. I was engaged in pike and perch work in Ohio.

Q. You did not put in a full season?—A. No, sir.

Q. Where were the fish distributed?—A. In Connecticut.

Q. Did you meet with much loss this year?—A. About the same as usual.

Q. The fish were pretty healthy. Do you make a report to the office upon each trip?—A. Yes, sir; I make a report of every trip I make.

Q. Do you report the percentage of loss?—A. Yes, sir.

Q. On each trip?—A. Yes, sir.

Q. Do you meet with the loss of any shad on these trips?—A. Yes, sir; a small percentage.

Q. Do you know the percentage?—A. I think about 5 per cent.

Q. From your experience as a messenger in the distribution of shad, what do you honestly consider to be the condition of fish taken out this year as compared with former years?—A. I have only made, as I said, one or two trips. What fish I had were in good condition.

Q. As good as in former years?—A. Yes, sir.

Q. Were they all strong and healthy fish?—A. Yes, sir.

Q. Do you not think that if all the young fish had been properly handled in hatching and nursing many of them would have been strong enough to have been planted in other rivers at a greater distance from the place of hatching?—A. That is a question I could not answer, because it is work connected with the stations, and, as I said, I have not been here but a few days. I was out on the trip and did not know much about them.

Q. From the best of your knowledge and belief what would you think was a fair and honest count of the fish in each can; about how many fish in each can?—A. They average about 25,000 to a can. It depends upon the size of the can. They have two or three different sizes of cans. What we call the wood-bound can averages about twenty or twenty-five thousand. Then we have a larger can, called the iron-clad can, holding more.

Q. About 25,000?—A. More than that, about 30,000.

Q. How have the cans been filled this year as compared with former years?—A. I do not know any difference.

Q. Did you notice the difference between this year and former years?—

A. If they make a shorter trip they crowd them and put more in. If they go on a longer trip they do not put in so many.

Q. On a short trip it is safer to put in a larger number than on a long trip?—A. Yes, sir; therefore they may reach more than 30,000.

Q. Did you candidly believe you carried the number of fish in each can which you were said to have carried?—A. I could not dispute that; I think so. That is something I would not swear to, because the number of fish put in there is only an estimate.

Q. You do not put the fish up in the cans?—A. No, sir.

Q. You take charge of them in the car?—A. When they are turned over to me.

Q. From the appearance of the cans you would think the number was about the usual number or more or less?—A. Sometimes they might

make a bad estimate, but I would not say they were not. I do not think it would be much difference.

Q. Do you deem it advisable to carry 50,000 young shad on a long trip as far as Florida?—A. If the weather was favorable I think it would be. That is only about twenty-four-hours' run. I would not like to cross the continent with that many.

Q. You think to run to Florida it would be safe to put in 50,000 shad?—A. Yes, sir.

Q. How far west have you ever been in distributing fish?—A. Montana.

By Senator SQUIRE:

Q. Have you ever been to Washington?—A. No, sir.

Q. Do you know of any shipments of fish made there?—A. I think there have been cars there.

Q. What points?—A. Walla Walla, I think.

By the CHAIRMAN:

Q. Do you know whether any fish have ever been taken to Seattle or about there?—A. I think some have been taken to Puget Sound.

By Senator SQUIRE:

Q. Who was the man who took the fish out there?—A. Mr. Ellis.

Q. Is he in this city now?—A. No, sir; he is at Wood's Holl, Mass.

Q. Has he ever come here?—A. Yes, sir; he has been ordered to report here for duty.

By the CHAIRMAN:

Q. With regard to this car service; going out with fish is confined to a certain part of the year?—A. We work in the seasons of the different fishes.

By Senator SQUIRE:

Q. One kind of fish at one time of the year, and another kind at another time?—A. Yes, sir.

By the CHAIRMAN:

Q. When are the shad sent out?—A. The last of April or the first of May.

By Senator SQUIRE:

Q. What other kinds of fish?—A. Brook-trout and white-fish.

By the CHAIRMAN:

Q. During what season of the year are trout sent out?—A. In the winter.

By Senator SQUIRE:

Q. What time of the year are white-fish sent out?—A. Early in the winter.

Q. What time of the year are shad sent out?—A. They commence the last of April.

Q. What other kinds of fish are sent out, carp?—A. Yes, sir.

A. What time of the year?—A. The fall; November.

Q. Of which kind of fish do you send the most of to the West?—A. Indigenous fish seems to be distributed more.

Q. You mean by indigenous those fish common to the United States of America?—A. Yes, sir.

Q. Carp is a German fish?—A. Yes, sir.

Q. What kinds of indigenous fish?—A. Mississippi and Illinois Rivers fish, the collecting points Maredosia and Quincy, Ill.

Q. Of these different kinds of fish you have named what kinds have you shipped the most of to the West?—A. Bass, crappies, and ring perch.

Q. Do you ship those to the waters of the Pacific coast, or do you ship them to the inland streams?—A. The inland streams.

Q. Of what kind do you ship most to the Pacific coast?—A. Shad; in California, the Sacramento River.

Q. Is there any difficulty in procuring sufficient quantities of these fish so as to supply the Pacific coast, to supply whatever demand may exist from time to time? Is there any particular reason why there should be any failure to supply the demands made from time to time?—A. No, sir. If any applications are made for fish we always fill them.

By the CHAIRMAN:

Q. Where are the salmon hatched?—A. At a station in California.

Q. You do nothing with salmon on the Maine coast?—A. We have a station at Bucksport, Me.

Q. Have you ever been there?—A. No, sir. I think the station in California is on the La Cloud River.

Q. Are not the salmon on the Atlantic coast different in their species from the salmon on the Pacific coast?—A. Yes, sir.

Q. The Kennebec salmon is different?—A. Yes, sir.

By Senator SQUIRE:

Q. I think the favorite salmon is hook-jaw or *Uncorhyncus*?—A. Yes, sir.

By the CHAIRMAN:

Q. Do you know of any relatives of Commissioner McDonald in the service, having been appointed by him?—A. I do not think he has any blood relations at all; he has some connections.

Q. By marriage?—A. Yes, sir.

Q. Give us the names of any persons of that kind you know of.—A. Mr. McCormick and two Mr. Lewises.

Q. Do you know of any others said to be relatives?—A. No, sir; I do not know how closely they are related. I am sure they are not blood relations.

Q. Do you happen to know of their service; that is, are they capable and efficient men in the places they occupy?—A. Yes, sir.

Q. You have some knowledge of them?—A. Yes, sir. If they were not, I think there would be some complaints made.

Senator SQUIRE. It seems to be generally understood that these men are related.

The CHAIRMAN. Yes.

By Senator SQUIRE:

Q. There are three, are there not, two Lewises and Mr. McCormick?—A. Yes, sir.

TESTIMONY OF HUGH M. SMITH.

HUGH M. SMITH, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Where do you live?—A. No. 1248 New Jersey avenue.

Q. Here in Washington?—A. Yes, sir.

Q. Are you in the service of the Fish Commission?—A. Yes, sir.

Q. In what capacity?—A. I am in charge of an office under Captain Collins.

Q. What branch of the service is that?—A. The fisheries division. We have to deal with the commercial aspect of the fisheries.

Q. How long have you been in the service?—A. Since the 1st of January, 1886.

By Senator SQUIRE:

Q. What do you mean by dealing with the "commercial aspect"?—A. In contradistinction to the propagating work. We get out statistical and other reports on the fisheries and investigate the fishing grounds and the methods of fishing.

Q. Does not that relate to propagating?—A. No, sir; we have nothing to do with that.

Q. You mean you have to do with the creation of these new stations and things of that kind?—A. No, sir; that comes under the propagation branch.

Q. You mean you get the statistics of what fish are caught?—A. The statistics of men, apparatus, and products of all the fisheries of the United States.

Q. Private fisheries?—A. Yes, sir. We investigate the commercial fisheries of the different States and prepare reports on them.

By the CHAIRMAN:

Q. You keep track of the salt water fisheries and coast fisheries?—A. Yes, sir; we have to deal chiefly with the salt water fisheries.

By Senator SQUIRE:

Q. From whom do you get the statistics?—A. We get them ourselves. We send men into the field.

Q. You send men to get statistics of what fish are caught on the banks of rivers up north?—A. Yes, sir.

Q. Different kinds of fish, tonnage, etc.?—A. Yes, sir; and the number of vessels, the nationality of the men, etc. All those things would be covered by a complete investigation of the fisheries of the country. We have now in the course of publication, or preparation, a complete statistical and historical account of the fisheries of the United States, which material has been collected by men of our office.

Q. What is the principal object this branch of the department has in getting this information?—A. We have frequently had occasion to furnish information to Congress and to the Executive Departments, and when the international fisheries conference was in session we furnished much information to them relating to the fisheries of the United States.

By the CHAIRMAN:

Q. By whom were you appointed?—A. By Professor Baird.

Q. What position did you occupy at first?—A. I was simply a copyist; I suppose the position would be so called.

Q. What was your salary at that time?—A. Fifty dollars a month.

Q. Your duties have been changed from time to time?—A. Yes, sir; very materially.

Q. And your compensation has been changed?—A. Yes, sir.

Q. What is your present compensation?—A. One hundred and fifteen dollars a month.

Q. When was that last increase made?—A. I think it was July, 1889.

Pardon me, it was this year; it was the early part of this year. I had another increase in July, 1889.

By Senator SQUIRE:

Q. A previous increase?—A. Yes, sir.

Q. You say you had an increase in July, 1889, and another one this year?—A. It was the early part of this year. I think it was February. I had another increase after my appointment to \$60 and a further increase to \$80 under Professor Goode, who was Commissioner for a short while.

By the CHAIRMAN:

Q. How much do you get at the present time?—A. One hundred and fifteen dollars a month.

Q. Have your duties been increased and your responsibilities increased?—A. Yes, sir.

By Senator SQUIRE:

Q. In what respect?—A. I have charge of a large amount of correspondence and direct the office and field work of six or eight men.

Q. You direct the office and field work?—A. Under Captain Collins, of course.

By the CHAIRMAN:

Q. Are you related to Captain Collins in any way?—A. No, sir.

Q. Was your attention called to certain newspaper articles published within the last month which made criticisms upon the management of the office here?—A. I read some of them.

Q. It was charged there that Colonel McDonald had appointed to office a good many relatives of his or his wife's. Do you know of any others except McCormick and the two Lewises who have been appointed?—A. No, sir; I do not.

Q. You think they are the only persons who are connected with him?—A. I do not know that they are relatives.

Q. It was charged in those articles that the discipline at this station was very lax; that the employes did not come promptly at the proper hour, 9 o'clock, and that they were very apt to leave early if they chose to. What is your knowledge and observation on that point?—A. So far as the present office force with which I am concerned is taken into consideration, I will say that the men arrive promptly at 9 o'clock and do not leave before 4 o'clock without permission, and in case they do leave before the close of the office the time is deducted from their annual leave. Most frequently the men remain from twenty minutes to an hour after office hours.

Q. To complete the work of the day?—A. Yes, sir; and many of the clerks also take work home at night.

Q. Where they do that do they receive extra pay?—A. No, sir; it is purely voluntary. In the past there have been some cases where clerks have been somewhat lax in the matter of attendance, but as soon as the matter was brought to the attention of the Commissioner it was righted.

Q. You say "in the past." How far back do you date that?—A. In the present year there was one such case. A young man—if I may relate the circumstances.

The CHAIRMAN. Yes, sir.

The WITNESS. A young man who had been connected with the office

for about ten years and who was a very efficient clerk resigned to take another position. Prior to his resignation he had been going to this other place in the morning and frequently remaining all day without any permission to remain away from the Fish Commission. His application for leave with a month's pay was granted conditional upon the completion of certain work which he was engaged upon, and his notes were in short-hand and only he could decipher them. He failed to observe any regularity in his attendance and he left in a huff, and his leave with pay was not granted. He was absent during the month of January some five or six days, and during February some ten or twelve days.

Q. Was that in your department?—A. Yes, sir.

Q. He was not paid for the time he was absent?—A. I think not. There was another case of an efficient clerk who was intemperate in his habits and absented himself for a number of days, and he was suspended and given an opportunity to explain his movements, and he was then dismissed. Those are the only cases which I now recall.

Q. Is it your observation—of course you know more about your own special department, but generally you would have an opportunity of observing—do you think the employés as a rule are there promptly and remain until 4 o'clock?—A. I can only speak for my own office. I will say they are punctual in their attendance, and attend strictly to their duties.

By Senator SQUIRE:

Q. Was this the only case of the kind where there was a failure to perform the duties of the office of which you have personal knowledge?—A. Yes, sir; that about covers it.

Q. Did you ever know of any other person or persons who arrived late in the morning and went away during business hours, or went away early in the afternoon?—A. There was a clerk who was in the office for a short while doing work for another division; simply given a place in my office. It was a lady, and she was somewhat irregular, but I am inclined to believe the irregularity was due to sickness. She was something of an invalid, and sometimes came late in the morning and had to be excused in the afternoon on account of sickness.

Q. Was she a regular employé of the office?—A. Yes, sir.

Q. Would your information in regard to this matter extend beyond your own immediate office? Would you know if these habits prevailed among other employés outside of your own office?—A. I think I would; yes, sir. These remarks apply only to office work. In the field, of course, the men have more or less freedom of movement. Then I have every reason to believe they are even more punctual than in the office. I have been in the field myself, and had other men with me, and during three or four months in the year we have averaged twelve to sixteen hours daily work.

By the CHAIRMAN:

Q. You say "in the field." Explain just what you mean. Do you mean on the ocean or on land?—A. Anywhere outside of Washington.

Q. Is that on land or on water when you speak of being in the field?—A. On the shore. We travel on the shore of the ocean, lakes, and rivers, and personally visit the fishing points.

Q. To collect your statistics from them?—A. Yes, sir.

Q. Do you know of anything further in regard to this matter?—A. No, sir; I can think of nothing further.

By Senator SQUIRE :

Q. Do you know anything about the Government having paid for materials for fishway models and filters which were being devised and invented by Commissioner McDonald?—A. I do not know anything about that.

Q. Do you know anything about Mr. Collins being engaged during Government time and at Government expense in getting up petitions to secure the confirmation of Mr. McDonald as Commissioner?—A. No, sir; I was not with Captain Collins then.

Q. You would have no opportunity to know of it, then?—A. No, sir. If I may be allowed, it might be proper for me to state that I myself occasionally come a little late in the morning, from five to twenty minutes after 9. During all the time I have been connected with the Commission, but more especially during the past year, I have been accustomed to take work home at night, and I think I average as much as ten or twelve hours per week extra work. That is purely voluntary and grows out of an interest in the work. I feel privileged to sometimes come late in the morning if I choose.

By the CHAIRMAN :

Q. You think that is fully compensated by the extra work at home?—A. Yes, sir.

TESTIMONY OF A. STEHMANN HERR.

A. STEHMANN HERR, being duly sworn and examined, testified as follows:

By the CHAIRMAN :

Q. Do you live in Washington?—A. I do now. I came here on the 1st of January.

Q. Are you in the service of the Fish Commission?—A. No, sir; I am not now.

Q. Have you been?—A. I was for seventeen days.

Q. For seventeen days?—A. Yes, sir.

Q. What position did you fill?—A. I was assistant night-watchman.

Q. When did you enter the service?—A. On the 25th of May.

Q. This year?—A. Yes, sir; 1890.

Q. And left it when?—A. The 12th of June following.

By Senator SQUIRE :

Q. From what State were you appointed?—A. I am from Pennsylvania.

Q. Who appointed you?—A. Mr. Worth.

Q. Have you been working with Mr. Worth?—A. Yes, sir.

Q. Down at this station?—A. Yes, sir; at the Central Station.

Q. That is where you were night-watchman?—A. Yes, sir; at the Central Station.

Q. Where is the Central Station located?—A. Down here at Sixth and B streets, in the old Armory building.

By the CHAIRMAN :

Q. Your employment was at the Central Station?—A. Yes, sir.

By Senator SQUIRE :

Q. You were under Mr. Worth?—A. Yes, sir; he is superintendent of the Central Station, and also of the hatching station down at Fort Washington.

By the CHAIRMAN :

Q. Why did you leave the employment of the Commission?—A. I was engaged only for the hatching season to assist the night-watchman. The duties of the night-watchman during that time are to watch the eggs, and of course at the same time you have to go all over the building and see that everything is all right, and Mr. Worth thought it was necessary to have assistance.

Q. Just for a short time?—A. Yes, sir; just during the hatching season.

Q. What was your compensation?—A. Forty-five dollars a month.

Q. That is the only time you have been in the service of the Commission?—A. Yes, sir. For the whole time I was there I received \$24.92.

Q. Did you ever see Mr. Worth under the influence of liquor or look like he had been drinking?—A. I never did.

By Senator SQUIRE :

Q. You never have seen him under the influence of liquor?—A. No, sir.

Q. Did you ever see any whisky or liquor about there on the premises?—A. No, sir; I did not.

By the CHAIRMAN :

Q. Do you know whether there are any employés in the service of the Fish Commission, appointed by Commissioner McDonald, who are relatives of his?—A. I do not know any more than what I have seen in the papers. I really never knew Commissioner McDonald or any of them, only by hearing of them from people in the employ of the Fish Commission.

By Senator SQUIRE :

Q. What time did you go on duty?—A. At 11 p. m.

Q. And went off when?—A. At 7 a. m.

Q. Were there any others employed the same time you were there?—A. No, sir.

Q. You were the only person on the premises?—A. The regular night watchman, and occasionally some of the transportation cars would come in. They went in and out at nights.

Q. Has any one talked with you about anything you knew in regard to the subject-matter of this investigation?—A. No, sir. Do you mean——

Q. Have you talked with any person, any newspaper man?—A. Not with any newspaper man; no, sir.

Q. Or has any one interrogated you as to what you knew with regard to this matter?

The WITNESS. As to the inside workings of the Commission?

Senator SQUIRE. Yes, sir.

The WITNESS. No, sir; I have been quite fortunate in that way. I would not have anything to report.

Q. We want to find out why you were subpoenaed. Have you any statement to make relative to the subject of this investigation in regard to the administration of the Fish Commission?—A. No, sir; I have not.

Q. If you have no information to present to the committee, and do not know why you are here, I do not know what we can ask you?—A. No, sir. I came up here to see why I was subpoenaed.

Q. Where are you living now?—A. Twelve hundred and sixteen O street southwest.

Q. You are going to be here right along?—A. Yes, sir.

TESTIMONY OF JOHN PAUL WILSON.

JOHN PAUL WILSON, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Your residence is in Washington?—A. It has been until the last two months; now I live in Springfield, Md.

Q. Are you in the employment of the Fish Commission?—A. I am.

Q. When were you appointed?—A. In the latter part of 1874.

Q. By whom?—A. Professor Baird.

Q. Have you been in the employ of the Commission ever since?—A. Yes, sir; continuously.

Q. In what capacity?—A. I went in as Professor Baird's stenographer, and then as the work of the Fish Commission increased I had vast duties assigned to me. At present I am in charge of the property, and am the property officer of the Commission and superintendent of the general offices of the Commission, and then I do translating of several languages.

Q. The Commission conducts correspondence with foreign fish people?—A. Yes, sir; France, Mexico, Germany, etc.

Q. What was your salary when you were first appointed?—A. Twelve hundred dollars a year.

Q. When was it increased, if it has been increased?—A. I could not say exactly. Probably after I had been there three years it was increased to \$1,440, and perhaps three or four years afterwards to \$1,600, and then about the same time \$1,800, and finally \$2,000.

Q. When was it increased to \$2,000?—A. About four years ago.

By Senator SQUIRE.

Q. Before the present Commissioner came into office?—A. Yes, sir.

By the CHAIRMAN:

Q. Your present salary is \$2,000?—A. Yes, sir.

Q. Has your attention been called to various publications, principally in the New York Press, criticising the management of the Commission?—A. Yes, sir; I have seen about half the articles that have appeared.

Q. In those articles it was charged that there was favoritism there, and that the Commissioner had appointed more or less persons who were relatives or connections of his own.—A. Yes, sir.

Q. Have you any knowledge in regard to that matter?—A. I have seen such statements, and then I have heard them denied. I could not say whether any one of those persons is related to him or not, from my own knowledge. I have heard people say they were, and have heard people say they were not. I know nothing, personally.

Q. Do you know Mr. McCormick?—A. No, sir. There is such a person, but I do not know him.

Q. Do you know Mr. Lewis?—A. Yes, sir.

Q. He is said to be a relative?—A. Yes, sir; of Mr. McDonald's wife.

Q. Is Mr. Lewis, in your opinion, a competent and efficient person?—A. I do not know anything about him. I have nothing to do with him. He is under a different branch of the work than mine.

Q. It is charged in those articles that the employés at the Central Station here are not very particular about observing hours; that they

are very apt to come late and go early, and that the discipline of the office is pretty lax. What can you say on that point?—A. I do not think it is true. I think the discipline is better than it was under Professor Baird. I think Colonel McDonald is quicker in enforcing discipline than Professor Baird was.

Q. As matters come under your observation, do you think the employés are there as a rule promptly on time?—A. I do, indeed. I do not think there is any just criticism to be made there. I am sure that all the subordinates have to ask permission before they go out, and have to report when they come back. As far as I know, none of them would go out without asking permission.

Q. One of the principal charges was that the Commissioner exercised more or less favoritism; that he had his favorites and those he did not like, as well, and that the salaries of his favorites were apt to be advanced and their duties not made very heavy, and so on. Can you give us any information on that point?—A. I presume in every department there are favorites, but I have no reason to suppose that his favorites were not appointed on their merits. I have no reason to think they were not.

Q. Do you know of any employé at this office who is retained in position who is not a good and faithful person in his position?—A. I can not think of anybody; no, sir.

Q. You have charge of the property, you say?—A. Yes, sir; that is, of the property throughout the country. We have a great deal of very valuable property on the vessels and at the various stations.

Q. Your jurisdiction extends to the property throughout the whole country?—A. Yes, sir.

Q. In the exercise of your duties, do you visit these various stations?—A. I do not as a rule; no, sir.

Q. You have reports?—A. Yes, sir; I have a quarterly report. Then I compare them with my records, and if they are not satisfactory I return them for correction until they are satisfactory.

Q. Have you ever been at Put-in-Bay Station since they built that station?—A. No, sir.

Q. Have you ever been at Leadville since they built that station?—A. No, sir.

By Senator SQUIRE:

Q. Do you know anything about Great Falls?—A. There is a fish-way there.

Q. Do you know anything about the operation of that?—A. No, sir; I remember when that fish-way was put up there; it was carried away.

Q. It was carried away?—A. I think some sections were carried away.

By the CHAIRMAN:

Q. We were directed to make this inquiry covering the general administration of the office here as to its business methods and as to any favoritism or any maladministration of the office. Now, I will ask you if you can give us, in your own way, any information on any of those points to do so. I will put it in this way: If there are any methods pursued which are not business-like and are subject to criticism you may state it to the committee.—A. I do not think I can make any criticisms. Colonel McDonald had a great deal of experience in this work before he was appointed, and some people thought he was too enthusiastic in his work; but I think all those expectations have been disappointed. I

think he is thoroughly business-like in all the work of the office. I do not think there is any just criticism to be made.

Q. Regular business-like way?—A. Yes, sir.

By Senator SQUIRE:

Q. You say you do not know anything about the Great Falls matter?—A. No, sir.

Q. Do you know of any of the men being employed at Government expense upon models of fish-ways or upon filters or anything of that kind?—A. I saw such statements in the papers, but I do not know that they are true.

Q. You know nothing about it?—A. No, sir; I have nothing to do with the Central Station.

By the CHAIRMAN:

Q. Is your office there?—A. Yes, sir; upstairs. I know Colonel McDonald has his enemies. I know, for instance, Mr. Smiley has always been a grumbler. He was just as critical with Professor Baird's actions and also as to Professor Goode's actions.

By Senator SQUIRE:

Q. The purport of what you say would be favorable to the present Commissioner and nothing critical?—A. Yes, sir.

Q. And in favor of his administration?—A. Yes, sir.

Q. You have no criticisms to make?—A. No, sir.

At 3 o'clock and 30 minutes p. m., the subcommittee adjourned until to-morrow at 10 o'clock a. m.

WASHINGTON, D. C., *July 9. 1890,*

The subcommittee met at 10 o'clock a. m. pursuant to adjournment.
Present: Senators Stockbridge (Chairman) and Squire.

TESTIMONY OF RICHARD RATHBUN.

RICHARD RATHBUN, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What is your name?—A. Richard Rathbun.

Q. Where do you reside?—A. For the last ten years I have made Washington my residence.

Q. Are you in the service of the U. S. Fish Commission?—A. I am.

Q. In what capacity?—A. As assistant in charge of scientific inquiry.

Q. When were you appointed to that position?

The WITNESS. To that particular position?

The CHAIRMAN. When were you appointed in the service of the Commission?

A. During 1874 and 1875 I was a member of the sea-coast investigating party under Professor Baird as a volunteer.

Q. What position did you subsequently occupy?

The WITNESS. After that?

The CHAIRMAN. Yes.

A. In 1875 I went to South America as geologist on the geological survey of Brazil.

Q. Not in connection with the Fish Commission?—A. No, sir. I went there, and then returned in the spring of 1878, and immediately joined the Fish Commission again as a paid assistant.

Q. When were you appointed to your present position?—A. My present position as assistant in charge of scientific inquiry, in November, 1887.

Q. By Professor Baird?—A. By Professor Goode, who was then Commissioner.

Q. And you retain that position still?—A. I retain that position still.

Q. What is your salary, professor?—A. My salary at present is \$2,700 a year.

Q. What was it at the time of your appointment by Professor Goode?—A. My salary then was \$2,000 a year. Prior to my appointment it was \$2,000 a year. On my appointment by Professor Goode it was increased to \$2,200 a year.

Q. Have your duties increased since you were appointed by Professor Goode?—A. Yes, sir. I will state this, that the office was created by Professor Goode as a necessity of the Commission. It had not existed before. The duties of the office have rapidly increased since then.

I should further state, however, in explanation of the matter, that in the organization of the Commission, as made by Professor Goode, three divisions were recognized: scientific inquiry, the methods and statistics of fisheries, and fish-culture. Mr. Goode placed a man at the head of each of these divisions, being men who had previously been in the Commission. Fish-culture was regarded as the more responsible position. It was then practically the middle of the fiscal year, and Colonel McDonald, now Commissioner, was appointed by Mr. Goode in charge of fish-culture. Holding the more responsible position, he was paid the larger salary, the salary being increased at that time to \$2,700 a year. The appropriation, not being the beginning of the fiscal year, did not permit of placing the others on the same par, therefore he made the salaries as high as he felt justified, in accordance with the appropriation he had to spend, with the idea that they should be increased at the beginning of the next fiscal year.

Q. Your salary was increased by Mr. McDonald?—A. My salary was increased by Colonel McDonald on July 1 following. July 1, 1888, it was increased to \$2,500 a year.

Q. And when was it increased to \$2,700?—A. The last increase was the 1st of September, 1889.

I should like to state right here, further, that those increases I did not ask for. They came to me without request.

Q. Prior to the increase to \$2,700, had the duties also increased?—A. The duties have increased to the present time, and they are getting more and more onerous all the time.

Q. How many employes have you in your department?—A. If you will allow me to explain: The division of scientific inquiry, of which I am in charge, includes the expenditure of the appropriation of \$15,000 for scientific inquiry by Congress, the operations of the steamer *Albatross*, and the operations of the steamer *Fish-Hawk* and the schooner *Grampus*, when assigned to that work. The *Albatross* is always engaged in that work.

Q. Just state in brief what that service is. What does the *Albatross* do?—A. The purpose of the *Albatross* is to investigate the fishing grounds along the sea-coast. Practically her duties are in connection with what are called the off-shore fishing grounds; that is, in contradis-

tion to those close along shore. She determines the location of the fishing grounds, their characteristics and their resources, the kinds of fish which occur upon them, their abundance, their suitability for market, the distance of the fishing grounds from the market, the permanency of the grounds, and all matters of that sort. Until the fall of 1887 the *Albatross* was on the Atlantic coast. In November of that year she sailed for the Pacific coast, arriving there on the 14th of May, 1888. Since then she has been engaged on the Pacific coast between San Diego and Behring Sea. The *Fish Hawk* has the same character of work when assigned to scientific inquiry, but close along shore.

Q. Along the Atlantic shore?—A. Yes, sir. Her duties are confined to the Atlantic coast, being related principally during the past two years to the oyster grounds of southern New England.

The *Grampus* has been engaged in similar work, such as a careful examination of the red snapper and grouper grounds of the Gulf of Mexico off the coast of Florida, and of the mackerel region of the New England coast. Well, I will simply state there, that the conduct of that work comes under my direction.

Besides that we have all investigations carried on by the appropriation specifically made for scientific inquiry. That includes the operation of the Wood's Holl laboratory and the Washington laboratory; all the investigations of interior waters; that is to say, the lakes and rivers in the interior of the country, including Alaska; temperature investigations, etc.

That is all the work properly belonging to the scientific inquiry respecting food fishes and fishing grounds.

Q. I should like to ask right there, has the clerical force in your office been increased from time to time?—A. The office, as I said, was created in November, 1887. Previous to that there were, of course, no clerks. There are now three in the office, two of whom were new appointments, and one a transfer from another branch of the Commission. Their work relates to the administration of the affairs of the division.

In addition to that we have one person in the laboratory who has general care of the collections and of the assorting and sending out of specimens for specialists for study.

The ichthyologist, in so far as his duties at present relate to scientific inquiry, is connected with the laboratory. However, he has been acting as editor for about a year.

Then we have in the investigation of interior waters entirely a volunteer force, whose expenses are paid when in the field. That work has been carried on, outside of Alaska, almost entirely under the direction of Dr. David S. Jordan, president of the University of Indiana.

It is well to explain here, perhaps, that a nominal salary of \$25 a month was paid these men last year to cover wear and tear of clothing and little incidental expenses which could not be covered by vouchers.

Q. They are paid no other compensation?—A. No, sir; they are volunteers.

Q. Has the increase of force in the office been made necessary by the increased work which has been carried on by your branch of the service?—A. The increased work has necessitated the organization of the office and the employment of that help, which amounts to three clerks, receiving salaries of fifty to a hundred dollars a month.

Q. Are they only reasonably busy?—A. They are kept exceedingly busy, without one moment to spare at any time of the day.

Q. Let me ask you here, because it has been charged otherwise, do the employés in your office report promptly at 9 o'clock, and do they

remain until 4?—A. Yes, sir; until 4 o'clock. They are prompt in their attendance, and never leave without express permission at any time through the day. The cases of their leaving perhaps an hour or a half hour a day before the end of the day would not be more than two or three times in the year, and by express permission.

Q. It has been charged that under the present Commissioner there have been appointments of a good many relatives or connections of his, or of his family, in one branch or another of the service. Do you know anything about that?—A. I probably know all there is. I know of one appointee, Mr. Frank McCormick, who is a nephew of Mrs. McDonald. I understand that the two Lewises, who have been spoken of, are connections in some way by marriage; how near I do not know.

Q. Do you know anything about their capabilities and efficiency as employes?—A. I know personally Frank McCormick and R. E. Lewis. I consider them both excellent men, hard-working and efficient.

Q. I want to ask you right there, to complete this, do you know anything about the regularity of their attendance, whether they are subject to the same rules as others?—A. They are. As to Frank McCormick, he is in my office. I wish to make this further explanation, that so far as his appointment is concerned, I am responsible for it. I regret it on his account, for the disturbance it seems to have created, but on my account I do not, because I consider him, for his experience, one of the best clerks I ever had in my office. He is a young man who received his first training in type-writing in a lawyer's office, and was taken by me for the same class of work.

Q. He testified as to that. I simply want to ascertain whether he is a good clerk?—A. He is one of the best clerks I have ever had in my office.

Q. It has been charged that the present Commissioner has his favorites to quite an extent, and that they are favored by receiving promotions and by being accorded more liberty than others. Can you say anything on that point?—A. I can speak more plainly with regard to myself than any one else. I will make the general statement that I do not believe that to be the case. As to myself, I was not in favor of Colonel McDonald's appointment as Commissioner, and he knew it at the time. I took no steps, of course, against him, because I did not consider it judicious for one in the office to be mixed up on such matters. My resignation was placed in his hands immediately after his appointment, and because of my preference for purely scientific work that resignation has been handed in since then two or three separate times, and I remain on the Commission simply at his urgent request. I am not dependent upon the Commission for my living. There has been no favoritism with reference to myself. I consider that I have given equivalent for my compensation, and that I am retained simply because I have performed my duty satisfactorily to him, a matter, however, of which he is the better judge.

I said I was opposed to his appointment. I wish to say that I consider him, although opposed to his appointment in the beginning—I wish to say, from my past experience under his direction, that I consider that no mistake was made in appointing him. I think it is only just that I should add that.

Q. Do you know anything about the management of the fish station at Fort Washington?—A. I have no connection with that at all. I have visited the station three times in my life, the first time a number of years ago, not in connection with the Fish Commission, and the last

year once, and this year once during the hatching season with the Commissioner, spending only a few hours there each time.

Q. Do you know anything about the habits of the officer who has been in charge there, Mr. Worth?—A. I know Mr. Worth only in the office in Washington.

Q. Have you ever seen him intoxicated or under the influence of liquor?—A. On the contrary, I have always considered him a man of exemplary character, free from faults, and I can frankly say that such has been the case whenever I have seen him.

Q. Do you know anything about the use made of the money received from the sale of fish at that station?—A. No, sir. I have understood that the fish were sold and the money applied to pay for the running of the seine. But that to me is only hearsay. I have no knowledge on the subject.

Q. Has your attention been called to various newspaper articles published within the last month or so reflecting upon the Commissioner's management of the affairs of the Commission?—A. I have seen several articles.

Q. What is your opinion, from your knowledge in connection with the Commission, as to the business methods of this office; are they conducted in a business-like, systematic manner, or otherwise?—A. I consider that they are conducted in a more systematic and business-like manner than any Government office I have ever been connected with.

Q. In your branch of the service, do you have occasion to expend money, to make purchases?—A. I do, sir.

Q. How do you manage that; are the payments made upon vouchers which are approved by yourself?—A. Every voucher for expenditure from the appropriation for which I am held responsible by the Commissioner is approved by me.

Q. Do you consider that all those expenditures are made in an economical and business manner?—A. I certify to that on the voucher, and of course I hold myself.

Q. You spoke of disbursing a certain appropriation.—A. I do not disburse.

Q. You direct the expenditure?—A. Yes, sir. The appropriation of \$15,000 allotted to my division is expended upon vouchers which are certified to by me. However, expenditures are never made from this appropriation, excepting on requisitions, which are certified to by the disbursing agent and approved by the Commissioner. I have no authority to make any expenditure whatsoever, except upon a requisition signed by the Commissioner, no matter how small the expenditure may be.

Q. Have you ever been at the Leadville Station?—A. No, sir.

Q. Have you ever been at the Lake Erie, the Put-in Bay Station?—A. No, sir.

Q. Do you know Mr. Gay, who is in charge of stations?—A. I have known Mr. Gay since he has been in Washington.

Q. Do you consider him a competent person to have charge of these stations?—A. I have had no connection with him in any work or branch of the inquiry, but I have personally considered him fully competent, and would think that his former experience would fit him especially for that kind of work.

Q. What position did he hold previously?—A. He was president of the State fish commission of Pennsylvania, and on that having direct charge of the propagating work. He was their active man.

Q. So that his previous education in that direction fitted him, you would think, for the position he holds?—A. Precisely so.

Q. If you can state anything touching the points involved in the resolution which you have not already stated, you will please do so.—

A. I will say simply with reference to reported changes in the force, that within my knowledge such changes have never been made, excepting in the interest of the work of the Commission and not from any influence brought to bear against the persons who have left the Commission. In fact, so far as I know, nearly every person who has left the Commission since Colonel McDonald has been in charge has done so by his own free will, resigning for reasons best known to himself.

Q. Has the general increase in the business of the Commission made it necessary to increase the total number of employés, in your judgment?—A. Decidedly so, in all the three divisions of the Commission and more particularly in propagation, where the new stations render a larger force necessary, but it is the same in the division of scientific inquiry, where the work being carried on to-day is producing actual results far ahead of what was accomplished before the present administration.

Q. So far as your knowledge extends, how do the salaries paid the Fish Commission compare with the salaries paid in other branches of Government service for the same character of work?—A. I have never made a comparison of the salaries of clerks, but I think as a whole that the rate of compensation in the Fish Commission is low compared with the other departments. So far as the lower grades are concerned below the classified service, it is exceedingly low. So far as the professional assistance is concerned, it is very low.

Q. You could hardly make a comparison?—A. Hardly; but corresponding positions in the other scientific bureaus of the Government service are generally accompanied by much higher salaries, and college positions throughout the country generally pay higher salaries.

Now I think that I have answered your questions so far as they are covered by this resolution, although I am quite ready to go further.

Q. Now, it is charged that the administration of the office, as I said before, is loose and not business-like, etc. You have stated generally that you thought the contrary was the case?—A. Yes, sir.

Q. Now if there is anything which you think fairly comes within the scope of our inquiry, which you have not stated, please state it in your own language?—A. I do not think I have anything more to say. Of course, my observation is limited, practically, to my own division; I consider that that is being run on purely business principles and has been ever since it was organized.

Q. Let me ask you this question: You said that at the time of Colonel McDonald's appointment you did not favor his appointment. If that matter would come up now would you or would you not favor his appointment?—A. I practically answered that question afterwards in the same connection, to the effect that I certainly would favor his appointment, and that I considered him the best fitted man in the country, so far as my experience goes, for the place of Fish Commissioner.

Q. Let me ask you whether, in the appointment of any employés political considerations have been brought in?—A. I do not think they have at all. I know the politics of very few members of the Fish Commission.

Q. It is not a political machine?—A. It is not a political machine. I do not doubt that persons have been recommended by members of

Congress for positions there, which they have received, but if such is the case their appointment is based upon their fitness for the place and not on political grounds.

TESTIMONY OF CHARLES E. GORHAM, Recalled.

CHARLES E. GORHAM, being recalled, testified as follows:

By the CHAIRMAN:

Q. You were sworn yesterday?—A. Yes, sir.

Q. What are your duties in connection with the Fish Commission?—

A. Architect, civil engineer, and draughtsman.

Q. How long have you been employed in the Commission?—A. Seven years permanently, and have been at times from 1876.

Q. Did you draw the plans for the Colorado hatchery?—A. Yes, sir.

Q. What was the agreement, if any, concerning payment for the same?—A. I had no definite agreement regarding the payment for them. I was to make the charge at the completion.

Q. Were you then in the employ of the Commission?—A. I was employed per diem by the Commission, and I was to make these plans for the Commission and charge a price for them. I was working at that time on plans for the fisheries at the Great Falls, on the Potomac River. But as to the plans of this building the Commissioner asked me to make them.

Q. Not under your per diem?—A. No, sir; to sell them to the Government at a price.

By Senator SQUIRE:

Q. What wages did you get for that?—A. I was working for the Engineer Department then. Six dollars a day for making plans for the Great Falls fisheries.

Q. You got \$6 per diem and got paid for the plans besides?—A. I was not to do the work during office hours.

Q. I did not mean that you were working on them during office hours. I mean whether you did them in office hours or out of office hours?—A. I did them during my own time, and not while I was paid for the other work.

By the CHAIRMAN:

Q. What was the agreement, if any, concerning definite payment for the same?—A. There was no agreement.

Q. Did you put in a bill; if so, for what amount?—A. Two hundred dollars.

Q. What did you receive?—A. One hundred and seventy-five dollars.

Q. Why did you not receive full pay for your bill?—A. They objected to it as being too large.

Q. Did Mr. John Gay set the price upon your work?—A. I understand that he said the price was too large; that \$200 was too much for the work.

Q. You do not know whether he really fixed the price or not?—A. I do not; I know the bill came back from him disapproved.

Q. By what right did he sit in judgment on your architectural plans?—A. I can not tell you that.

Q. Do you consider Mr. Gay a competent judge of such work?—A. I should not think he was. He is not an architect.

Q. Do you consider any one not an architect a fit person to be placed in judgment as to the fairness of your bill?—A. No, sir; not unless he was a builder of large experience who had been familiar with that class of work.

Q. Is there not a certain percentage of the cost of building that custom or law allows an architect to charge; if so, what is it?—A. Two and a half per cent. of the cost of the building and plans, and $2\frac{1}{2}$ per cent. in addition where he superintends.

Q. Were you paid that percentage of the cost of this building?—A. No, sir.

Q. Have you drawn plans for other buildings?—A. Yes, sir.

Q. Name them.—A. Plans for the building at Duluth, Wytheville; plans at Washington, Havre de Grace, Md.; Gloucester, N. J.; Wood's Holl, Gloucester, Mass.; Fort Washington Station.

Q. Has Mr. Gay ever questioned the fairness of price or salary drawn in the completion of the same?—A. He had nothing to do with those plans. They were prepared outside of his knowledge, and most of them before he came into the Commission.

Q. Did you not take the money paid you for the plans of the Colorado Station under protest?—A. Oh, no; I accepted the amount and gave a receipted bill.

Q. Did you ever receive the full amount of your bill?—A. No, sir; the full amount would have been about \$300 or a little over, according to the architect's scale.

Q. Your bill was \$200?—A. Yes, sir. I put in a reasonable bill.

Q. And you received \$175.—A. Yes, sir.

Q. Do you consider the lowering of the Put-in Bay hatchery 1 foot to be beneficial to the extent of money expended, thirteen hundred and odd dollars?—A. I can not state. I have never been out there and know nothing about the location.

Q. You prepared the plans of the building?—A. No, sir; I did not prepare those plans and am not able to state anything about that.

Q. Do you consider Mr. Gay's knowledge of architecture foots the expenditure of the above sum; that is, the cost of the lowering of the Put-in Bay Station?—A. I know nothing about that.

Q. Have you ever made any plans or drawings of fishways other than those of the Great Falls fishways in Government time?—A. I have made other plans for fishways.

Q. Besides those?—A. Yes, sir.

By Senator SQUIRE:

Q. Which have been accepted by the bureau?—A. Yes, sir; they were made for the use of the Fish Commission and of the War Department, the engineer branch of the War Department.

By the CHAIRMAN:

Q. What fishways?—A. The improvements of the Green and Barron Rivers, of Connecticut. I made those.

Q. Did you ever make plans or alterations in plans for the McDonald patent water-filter in Government hours?—A. When the colonel—that is before he was Commissioner three years ago—first invented this idea for a filter, at that time I did some work on the plans in bringing out his ideas.

Q. In Government hours?—A. Yes, sir; but the filters at that time I understood were to be used entirely for the benefit of the Fish Commission. That is why I was called upon to do the work.

By Senator SQUIRE:

Q. Just repeat the last remark.—A. The filters which were made were used for the service of the Fish Commission. They were made to be used at different stations of the Fish Commission.

Q. Was that original work that you did for any particular fish station or any particular place?—A. To be used at the Central Station and at Wood's Holl.

Q. What was the nature of this work that you did?—A. The Commissioner had the crude ideas for his invention and he asked me to work them out in proper shape for manufacture, and I made plans for the filters.

Q. You made plans for these filters?—A. Yes, sir.

Q. From his crude ideas?—A. Yes, sir; from his rough pencil sketches. I did only the mechanical part of the work.

Q. Was that invention so worked out by you patented afterwards by the Commissioner?—A. It was patented about that time. The original patents were gotten out about that time.

Q. You say you worked out these crude ideas from these rough pencil drawings antecedent to and as part of the business of getting the patents?—A. I knew nothing about having any patent attached to it at that time. I know now it was patented about that time.

Q. That work was done during Government hours, during the time you were paid \$6 per day?—A. Yes, sir; I was working then under Professor Baird's directions. He told me to—

Q. What year was this in?—A. In 1887, I think.

By the CHAIRMAN:

Q. Did you do this work under Professor Baird's directions?—A. Professor Baird told me in a general way to give Colonel McDonald all the assistance I could in any of his work.

By Senator SQUIRE:

Q. Were your special directions received from Professor Baird or Mr. McDonald?—A. From Mr. McDonald.

By the CHAIRMAN:

Q. Professor Baird requested you to assist Mr. McDonald in working up his invention?—A. Yes, sir; I reported to him nearly every day, and he knew what I was doing.

By Senator SQUIRE:

Q. To what extent have these filters been used by the Fish Commission?—A. Ever since.

Q. How many instances?—A. At the Central Station, Washington.

Q. Any other place?—A. Not to my knowledge.

Q. You would know if they had been used elsewhere?—A. I have not been at stations enough lately to know.

Q. Have you been in the habit of knowing what filters, if any, were used at the other stations; have you been in the habit in your business of preparing plans, knowing what the preparations were?—A. Yes, sir.

Q. Have you known what filters were used or whether there were any used or not?—A. In a general way I have.

Q. You do not know of any other place where the filters have been used except the Central Station here at Washington?—A. No, sir.

By the CHAIRMAN:

Q. Do you know what improvements and changes have been made

from the original plans?—A. Yes, sir; great changes in the construction of the filter, but keeping the same idea.

By Senator SQUIRE:

Q. Have you done all the work in reference to those?—A. Yes, sir.

Q. No other person has been working on those plans but you?—A. No, sir; not that I know of. Early last fall the Commissioner told me he wished me to go ahead and to get this filter into better shape. It was then rather large and unweildy. He thought it would have a commercial value as an invention for general use.

Q. Outside of Fish Commission purposes?—A. Yes, sir. He told me whatever work I did was to be done at my home. I was to keep an account of it, and render a bill after I had finished the work for him.

Q. Did you do that?—A. I am working on it still at intervals.

Q. Have you rendered any bill?—A. No, sir; I have never done so, because he told me then that if he got anybody to take hold of it—business men—that they would settle all such bills, and he had other bills.

Q. Have you done much work of that kind?—A. I suppose I have done about \$50 worth, probably.

By the CHAIRMAN:

Q. Outside of your regular time?—A. Yes, sir.

By Senator SQUIRE:

Q. Since he talked with you at that time have you done any work on it at all during Government hours?—A. No, sir.

Q. The time he had this talk with you was last fall?—A. Yes, sir; I think in October, 1889.

Q. What proportion of the work done by you has been done since that in perfecting this filter?—A. The greater portion of it.

Q. Has there been any patent taken out since you began to work at this business?—A. He has applied for other additional patents.

Q. Since that time?—A. Yes, sir, lately, and I made drawings to be used in getting out the patent.

Q. You did that out of office hours?—A. Yes, sir, entirely, and I know that the Commissioner has paid for having his models made himself, and for all the material he has used.

Q. How do you know that?—A. I have been informed so by him and by the man who got the castings made.

Q. Who was he?—A. Francis Barry, machinist, and the colonel told me that he was at the expense of getting the wooden models made before having the castings made.

Q. Where were they made?—A. In Washington.

Q. Do you know where and by whom?—A. No, sir; but I can very easily find out. The filtering tiles were made in Baltimore, at a pottery there.

Q. Do you know whether any of the expense connected with the preparation of these models was borne by the Fish Commission?—A. The only expense the Government has been put to is in assembling them there in the building and putting them together. The machinist was detailed by the Fish Commission to put them up. I think there are two or three filters now used by the Fish Commission. The thing has not taken any commercial shape yet. There has been none sold.

Q. Do you regard the invention as being a good one?—A. Yes, sir; I think it is a very good one. I think in the present shape it is a very good invention.

Q. What sort of shape was it in originally when you first made it?—

A. It was cumbersome and expensive.

Q. Have there been any radically new changes since then?—A. In the form of construction.

Q. But in the idea?—A. The idea is the same. It was to establish the filtering medium which was very common in earthen tiles. But his invention consists in cleaning those tiles by the friction of sand rubbing up and down on the surface. In place of having to clean the filter every day or so, this would act automatically until the tile was run out.

Q. That was the original idea?—A. Yes, sir; and it is the same to-day, only a change of shape and mechanical construction.

Q. Do you, or not, regard this invention as being of great value?—A. I think it is a valuable invention if it is put into the hands of good business men to put it on the market.

Q. For general purposes, for purifying water for drinking?—A. Yes, sir; or for domestic uses.

Q. How as to its value in connection with the Fish Commission?—A. We use it there in filtering the water for drinking and for use in the aquaria.

Q. Is it essential that filters be used in propagating fish?—A. I am not a fish culturist; I can not tell you that.

I will say one word here. The Commissioner was requested by the War Department to furnish these plans for those fishways, to be used in connection with their construction there.

Q. Requested by the Secretary of War?—A. Yes, sir; to furnish plans for these fishways. The dams were about to be put up for the improvement of navigation which would obstruct the passage of the fish, and most of the States require fishways to be put in all dams.

Q. You say the War Department requested it?—A. Yes, sir; I understood so.

TESTIMONY OF THOMAS W. SMILLIE.

THOMAS W. SMILLIE, being duly sworn and examined, testified as follows:

By Senator SQUIRE:

Q. Please state your name and place of residence.—A. Thomas W. Smillie, 618 G street southwest.

Q. Washington, D. C.?—A. Yes, sir.

Q. What is your business?—A. Photographer.

Q. In connection with what department or bureau of the Government?—A. The National Museum.

Q. What relation have you to the business of the Fish Commission?—A. That is a little difficult for me to say. I am the photographer of the National Museum, and the Fish Commission employs a laborer who works in my department doing the work of the Fish Commission under my supervision. He does a small amount of work for the Museum in return for the time that I devote to the Fish Commission work. This is an arrangement—

Q. How long has this arrangement been going on?—A. Since Commissioner Baird was Commissioner of fish.

Q. About what year?—A. Since 1882, I think.

Q. Since 1882 this arrangement has been going on?—A. Yes, sir. In 1882 I was an employé of the Fish Commission. I was paid by the Fish Commission.

Q. When did your connection with the Fish Commission cease? I mean the time that you were in the employ of the Fish Commission directly?—A. I can not state the time exactly. It was about the time Professor Goode gave up the Commissionership.

Q. Can you state approximately?—A. I think it must be about four years.

Q. About four years ago your direct connection with the Fish Commission ceased?—A. Yes, sir.

Q. Now please state what has been done by you or under your direction in behalf of the Fish Commission in your work as a photographer?—A. Mostly copies of plans. I think almost exclusively copies of plans of Fish Commission stations and buildings, etc., and such things as that.

Q. Have you ever presented any bill for your work as such photographer?—A. No, sir.

Q. Do you know of any bill having been presented for photographic work?—A. No, I do not know of any. I know there has been some work done outside. I assume it was private work that was done by professional photographers outside.

Q. For the Fish Commission?—A. For people connected with the Fish Commission. They were photographs of scenery, picturesque views taken of the Fish Commission vessels. Those things I suppose were printed by photographers outside.

Q. Do you know whether the cost or expense of these photographs of scenery, etc., was charged to the Government or not?—A. I think not.

Q. To whom do you think it was charged?—A. I know in a number of cases parties paid for them out of their own pockets; parties who were employed by the Commission.

Q. What cases do you recall?—A. In the case of Mr. Townsend and Dr. Bean.

Q. Here in this city?—A. Yes, sir. Mr. Townsend is now on the Fish Commission steamer, I think, and was at the time these plates were made originally.

Q. And Dr. Bean?—A. I am not sure about his position. I think he is curator in the Museum.

Q. These plates were prepared for him?—A. Yes, sir.

Q. And others for Mr. Townsend?—A. Yes, sir.

Q. You know that these men paid for them out of their own pockets?—A. Yes, sir.

Q. Did you never present a bill for your work to the Fish Commission. Here under the head of "vouchers" from the Treasury Department it seems that you have presented a bill. I notice a memorandum here indicating that some voucher had been presented to the Treasury Department as coming from you.—A. I am sure there has been nothing from me since the time I was first directly connected with the Commission.

Q. At that time did you present bills to the Commission?—A. No, sir; before that time I presented bills to the Commission and was paid for my work by the piece.

Q. When was that?—A. That must have been up to the year 1882. My connection with the Commission commenced in 1871. I was one of the first employés.

Q. You were continuously in the employ of the Commission from 1871 to 1882?—A. No, sir.

Q. Occasionally?—A. Yes, sir.

Q. How much at a time?—A. I think perhaps only two summers. I went away with Professor Baird.

Q. From time to time after that were you occasionally employed?—A. Not on a salary, but mostly by piece work.

Q. For which you presented bills to the Government, that is, to the Fish Commission?—A. Yes, sir.

Q. And you were paid those bills?—A. Yes, sir.

Q. To what extent were you paid for all that work?—A. There must have been——

Q. I mean dollars and cents?—A. I do not think I could approximate it at all. It ran over so many years.

Q. You did a great deal of work?—A. Yes, sir; there was a great deal of work done.

Q. Was much of the work done by you in the nature of taking photographs of scenery and things of that kind?—A. Not very much of that; in fact, very little of that.

Q. What did it consist of mainly?—A. Mostly the Fish Commission stations. For instance Battery Island. I made views of Battery Island at the time the Fish Commission occupied it. Then the Wood's Holl station, the Wytheville station, taking general views of the stations and surroundings and the apparatus used.

Q. Was this work of sufficient magnitude to occupy you a great deal of your time?—A. After 1882 it was.

Q. I mean during the time for which you presented these bills upon which you got paid for piece-work. I wish to know whether the magnitude of the work was such as to take up most of your time?—A. Oh, no; only comparatively a very small part of my time.

Q. Were you doing other work at the same time?—A. Yes, sir; doing work for the Smithsonian and National Museum.

Q. Did you present bills for your work for the Smithsonian and National Museum the same way, for piece-work?—A. Yes, sir; at that time I did. I also did the photographic work of the Agricultural Department at that time, and the Naval Observatory.

Q. To what extent was the work that you did of a private nature, taking scenery and so on, that was not germane to the work of the Commission?—A. I am not aware of any private work.

Q. But you did take pictures of scenery, which work was not connected with any fishery business particularly, pictures of scenery as such without reference to the work of the Commission?—A. I did not understand it as such. I understood that these views were taken with a view to their building additions to the buildings, or something of that kind; that they were to be used in getting up plans for additional buildings or something to that effect.

I should mention, perhaps, a lot of work that I did for the London Fisheries Exhibition, which came under the direction of the Fish Commission. In that case I took a great deal of scenery. I went all around the coast from New York to Eastport and took views of the fishing vessels in action, and then I took views of fishermen's homes.

Q. In what year was this?—A. 1882. That was when my direct connection with the Fish Commission commenced.

Q. From that time on in what way were you paid?—A. By the Fish Commission.

Q. In what way?—A. A salary.

Q. Did you do any more piece-work after that?—A. No, sir; no more piece-work after that.

Q. Did this salaried relation continue up to the time that you took your present position?—A. Yes, sir.

Q. I mean the salaried relation to the Fish Commission; did it continue up to the time you took your present position?—A. Yes, sir.

Q. Since you have taken your present position, as I understand you, you have not received any pay whatever directly from the Fish Commission?—A. No, sir.

Q. And such services as you have rendered have been paid for, or compensated for, rather, by certain work done by a laborer who is working under direction of the Fish Commission who did certain work for the institution for which you were working, namely, the Smithsonian?—A. Yes, sir. In case the work that was ordered required such skill as this man had not, then I did the work myself. Then he worked for the Museum sufficient to compensate the Museum for my time.

Q. In doing that did you do any work of a private nature for any individual connected with the Fish Commission?—A. No, sir; not that I am aware of. I am quite sure I did not.

Q. Did you present any bills for any work?—A. No, sir.

Q. Who paid for the material?—A. The Fish Commission paid for the material used on their work.

Q. Even though the work were done with reference to—that is, when the scenery was taken—with a view to the interests of the Fish Commission, the question is, who got these photographs; whose property were they afterwards?—A. The prints from the plates were delivered to the Commissioner always, and the plates are filed in the National Museum.

Q. Do you know of any individuals having these pictures who seemed to have acquired possession of them as their own personal property afterwards?—A. I am not aware of anything of the kind. The employés sometimes came in, and sometimes they picked up discarded prints, prints that were perhaps imperfect, and which were thrown into the waste, and carried them off. But I am not aware that any were furnished to parties who were not entitled to them.

By the CHAIRMAN.

Q. The object of taking these pictures was to illustrate the operations of the Fish Commission work?—A. Yes, sir. There was a large amount of work—about 700 plates—for the London Fisheries Exhibition.

Q. That was done under your supervision?—A. Yes, sir.

Q. That was paid for by the Fish Commission?—A. I was paid a salary far that.

Q. What year was that in?—A. Eighteen hundred and eighty-two.

Q. That was under Professor Baird's administration?—A. Yes, sir.

By Senator SQUIRE:

Q. State whether the practice of the Fish Commission in taking these pictures and spending this money for materials is any different now or has been any different during Mr. McDonald's administration from what it was under Professor Baird's administration?—A. There has been some difference. There has been less of the higher class of work done.

Q. Do you mean under Mr. McDonald?—A. Yes, sir. I should explain that. Professor Baird viewed the thing from a scientific point of view, and he had a great many pictures made of fishes and such things which were purely scientific pictures. Colonel McDonald has not had that done. His work has been almost exclusively copies of plans of buildings, and, as I said before, building sites and such things as that.

Q. Do you know anything about any vouchers paid to Robert Leitch

& Sons or Thomas Summerville & Sons, of Washington?—A. For printing frames, perhaps, for making photographic prints, copies of large plans, etc. Quite recently, within two months, there has been something of that kind.

Q. Printing frames?—A. Yes, sir; the large frames in which the glass is worked, and then a tracing is put in that, and then the paper behind it, by which means the copies are made by exposure to light. These frames are perhaps as large as this table [indicating] and rather expensive.

By the CHAIRMAN:

Q. For the reproduction of plans and buildings?—A. Yes, sir. There is some fine carpentering work and some fine glass work upon them.

By Senator SQUIRE:

Q. You do not know anything about the amounts of these bills, or whether the articles procured were necessary or not?—A. They were necessary, because they were ordered on my requisition.

Q. How expensive are they?—A. I think two frames cost about \$50.

Q. You regard them as essential?—A. Yes, sir; they were absolutely necessary in fact, because I had allowed this man to use a frame belonging to the museum, and this frame got in such a condition that it could not be used longer and was not fit for the museum work, and so the Fish Commission had to furnish frames then to take the place of that.

TESTIMONY OF JOHN GAY, Recalled.

JOHN GAY, being recalled, testified as follows:

By the CHAIRMAN:

Q. Why did you leave the Pennsylvania commission?—A. For the reason that the term of the board of which I was president expired, and there was a new board appointed by the incoming governor, Governor Beaver. It was political. It is a common thing for a State board to go out when there is a change of governors.

Q. While you were in the employ of the Pennsylvania commission, they established a fish hatching station at Erie, Pa., did they not?—A. Yes, sir.

Q. What were your duties while at that station?—A. I had charge of the construction of the station.

Q. Did you have the oversight of it after its completion and after it went into operation?—A. After the completion I had the general charge of it as president of the board, just as a commissioner would have.

Q. When this station was fitted out who was employed to fit it up?—A. The party whom we employed was William F. Page, the fish culturist of the United States Fish Commission.

Q. Was his work done satisfactorily?—A. Yes, sir; there was no reason to object to it in any way. I think a little explanation there would be proper. The reason that Mr. Page was employed was because he was a trained expert in the handling and operation of the McDonald hatching jar. We adopted the McDonald jar after I had made a thorough examination of the different jars, the Chase jar, for example, at Detroit, and I decided to accept the McDonald jar, which was agreed to by the board of commissioners, and Mr. Page was there during one season to instruct our men in the handling of the jars. There is some skill required in it and our men had been only engaged in trout culture

and had never handled the jars. That is the reason Mr. Page was taken there. That is the reason and the only reason.

Q. His work was satisfactory?—A. Yes, sir; we had no reason to object to it.

Q. Did you hear of the position of inspector of stations of the United States Fish Commission during the management of the late Professor Baird?—A. No, sir; I never did.

Q. What is your present salary?—A. Fifteen hundred dollars per annum.

Q. Under whose administration was the office of inspector of stations established?—A. Professor Goode, as I understand.

Q. And continued by Colonel McDonald?—A. Yes, sir; the present Commissioner.

Q. Are your expenses paid by the Government outside of your salary in addition to your salary?—A. When I am in the line of duty my expenses are paid just as any other employé of the Commission would be.

Q. Did you ever have anything to do with the location of the Colorado station?—A. Yes, sir; I selected the site.

Q. Please give the reasons for its present location.—A. The reasons are that the present location is the very best that—

Senator SQUIRE. I think he has already answered that question. I think he stated that it is about 6 miles from the railroad.

The WITNESS. Yes, sir.

Senator SQUIRE. I remember that.

Q. What was the amount of the special appropriation for this station?—A. The amount was \$15,000.

Q. How much of this appropriation had been expended previous to advertising for bids to construct the building?—A. I am unable to state the amounts that have been expended. The only expenditure that I am aware of was for advertising for plans.

Q. That is before the selection of the location?

The WITNESS. You mean what my expenses were in selecting it.

The CHAIRMAN. How much of this appropriation had been expended previous to advertising for bids to construct the building?

A. My expenses there in the fall of 1888, in September and October. I was there three weeks. Counting my time in going from Duluth and my return to Detroit I was gone exactly one month. I left Duluth on the 14th of September and returned to Detroit on the 14th of October. Giving one week in going and coming I was in Colorado three weeks. I do not think my expenses were charged to the Colorado station simply from the fact that we had no money appropriated at the time for the Colorado station. I was merely on a tour of investigation. I do not think that was chargeable to the station at all.

Q. In anticipation of expected appropriation you were looking for a proper location?—A. Yes, sir; just as if the Commission might ask me to go into Virginia to look for a station, not having any appropriation for it. It was charged to general account. Mr. Gill can give you that.

Q. What was the amount of the contract for which the building was let?—A. According to my recollection the amount was \$12,672.

Q. Were there any alterations made in the plan of the building after the contract was let?—A. None to my recollection.

Q. Why was cheaper material substituted for that named in the original specification?—A. I have no recollection of any cheaper material being substituted.

Q. The material used was the same as was contracted to be used?—A. You see I left there on the 15th day of October, and the foundations

were not quite completed at that time, and anything that was done after that did not come under my eye.

Q. Have you been there since?—A. No, sir.

Q. Can you give the total cost of all expenses connected with the construction of this station?—A. As I said before, the contract price was \$12,672. The building has not been taken off the hands of the contractor, and there is a sum, probably from \$2,000 to \$2,500, due the contractor in case his work is approved. Now, the original appropriation was \$15,000, and the difference between \$12,672 and \$15,000 was charged, say, for preparing the plans and, I suppose, advertising, and probably my expenses while I was there were charged to the station, which was a proper charge.

Q. Have you any knowledge of any funds being diverted from other appropriations to the payment of any of the liabilities properly chargeable to this station?—A. I have not.

Q. Did you have anything to do with the location of the station at Put-in-Bay, Lake Erie?—A. I located it.

Q. Who made the plans for this station?—A. I understand Mr. Blaisdell made the plans.

Q. Under whose direction were they prepared?—A. The Commissioner's.

Q. By whom were said plans approved before the work was advertised for and the contract let?—A. I saw the blue prints on which the Commissioner's name was written as approving it.

Q. Who received this contract for the building?—A. Mr. George E. Gascoign.

Q. Do you know the amount of the contract?—A. Indeed I can not recollect the amount. I did know it at the time, because I had the papers executed.

Q. Do you know of any changes being made in these plans after they were approved?—A. Yes, sir; having been ordered to be made.

Q. By whose authority were these changes made?—A. By the order of the Commissioner.

Q. Had you anything to do with the location of the hatching station at Gloucester City, N. J.?—A. Yes, sir; I had. I explained the whole thing to you.

Q. What was the total amount expended for carrying on the work at this station for the season of 1890?—A. I can not answer that without referring to my papers.

By Senator SQUIRE:

Q. Can you state approximately?—A. Indeed I can not. I have been so busy since I came back with other work that I could not. The fitting up of the station, I think, was \$800.

By the CHAIRMAN:

Q. What did the work cost in years past for the same station?—A. I can not tell you that.

Q. In what waters were most of the shad fry placed this year from that hatchery?—A. In Big Timber Creek.

Q. Were any special favors shown to the Pennsylvania Fish Commission?—A. No, sir; there were not. In fact, we have received more favors from the Pennsylvania Fish Commission than we have shown them.

Q. Have you ever devoted any of your official time to visiting Senators or Members of Congress to influence legislation, to defeat what is

known as the Paddock bill to transfer the Fish Commission to the Department of Agriculture?—A. No, sir.

Q. Have you ever written any articles for the newspapers urging petitions being framed and sent in to Congress urging the defeat of the bill to transfer the Fish Commission?—A. Not to my recollection; no, sir.

TESTIMONY OF J. S. GOLDSMITH.

J. S. GOLDSMITH, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What is your name?—A. J. S. Goldsmith.

Q. Where do you reside?—A. I am living at Tacoma, D. C.

By Senator SQUIRE:

Q. You reside in Washington. That is a subdivision. You have no post-office out there?—A. No, sir; my post-office is at Tacoma.

Q. There is a post-office there?—A. Yes, sir.

By the CHAIRMAN:

Q. Were you ever employed by the U. S. Fish Commission at Fort Washington?—A. Yes, sir.

Q. When?—A. In the spring of 1884 and 1885.

Q. Who was Commissioner at that time?—A. Professor Baird.

Q. What length of time were you employed there?—A. During the shad season, which was generally two months, not over two months and a half.

Q. What were your duties while there?—A. I kept reports. As the seine came in I made a report of the number of shad, the number of herring, the number of offal fish, and the number of ripe shad; and then after that I kept a record of the number of eggs shipped to Washington and hatched, the number of eggs that did not amount to anything, the number of fish hatched at the station and planted in the river; also the time of the men, thirty or forty employes. I kept an account of their time; and I suppose that is about all.

Q. Had you anything to do with the shad seine account?—A. Yes, sir. The men would sometimes come in and get two or three or four or five dollars. We allowed them their money up to the time they had worked. The darkies would want to draw all along.

Q. At the close of the season, when the accounts were settled up, did you have any money left over in your hands?—A. No, sir, not in my hands. Mr. James Carswell was in charge of that.

Q. That money I understand to be the money received from the sale of fish?—A. Yes, sir.

Q. Did you have charge of that money?—A. Mr. Carswell was the man who had charge of that money, and at times he gave me from fifteen to twenty or thirty dollars; but the money turned in from the sale of fish was delivered to Mr. Carswell.

By Senator SQUIRE:

Q. What was this money given to you for?—A. To give to the men, the seine-haulers. They allowed them a dollar a day.

Q. In the payment of their wages?—A. In the payment of wages.

By the CHAIRMAN:

Q. You disbursed the money in payment of the men and accounted

to Mr. Carswell for it?—A. Yes, sir. The books ought to be in the Commission to show for it. I kept a complete record of each dollar.

Q. Did you take receipts?—A. I took no receipts, because there was not a man there capable of writing his name. I kept an accurate account of the money that had been given them, and then we deducted that from the amount of their wages.

Q. When you settled with them at the end of the season, did you take a receipt from them for the total amount paid?—A. I can not recollect, but I think we did—yes, and I had them sign their names with a cross-mark and I wrote the names. I wrote out receipts in each case and balanced up their accounts, paid them their money.

Q. Having a gross receipt?—A. Yes, sir.

Q. That you turned over to the officer in charge. How long since you have been in the employ of the Commission?—A. Since 1886. I left the Commissioner December 3, 1886.

Q. Have you had any particular knowledge of it since?—A. No, sir. I am connected with the National Museum as assistant property clerk in charge, during the absence of the property clerk. We are closely connected down there, but still I have not the time to go over and take the interest I used to like in fish; in fact, I have not been there since I left the Commission.

TESTIMONY OF F. L. DONNELLY, Recalled.

F. L. DONNELLY, being recalled, testified as follows:

By the CHAIRMAN:

Q. What has been your special work for the last six month?—A. I keep the records in the office of the division of distribution. I have been there for about eighteen months.

Q. Have you been engaged upon statistical work any part of this time?—A. Yes, sir. I tabulate the operations of the Commission, the production of fish and the distribution of fish.

Q. Did you make up the statistics which were to be used with the letter to Hon. Mr. Henderson, of the sub-Committee on Appropriations, in March last?—A. Well, I do not know whether the tables I made up were used for that purpose or not. I tabulated the operations of the Commission for several years, showing the increase of work; and whether that statement was submitted to Mr. Henderson I am unable to say. I furnished it to the Commissioner, and what use he made of it I am unable to say.

Q. How did you prepare those tables? Upon what data did you prepare them?—A. We get our information from the station superintendents and the messengers who transport fish.

Q. That is done from time to time?—A. From time to time. They send in the information, and when it is all together it is tabulated.

Q. Just state how the tables were made and just what points were shown by these tables?—A. They show the production, the number of fish produced at the stations, the number distributed and planted in the waters of the United States, and in detailed form giving the exact number of each species or variety, the streams in which they were deposited, the number deposited, the number lost in transit, and the persons who made the trip and did the work. They also show a comparative statement of the increase or decrease in the work each year.

Q. At each station?—A. Yes, sir.

Q. And that information you received from the different stations and

from the persons in charge of distribution?—A. Yes, sir; they furnish the information and I record it and tabulate it.

Q. The statement which has been alluded to here, which was furnished to Mr. Henderson, presumably, was a correct statement made up from the records in the office, was it?—A. Yes, sir; a correct statement, tabulated from the information furnished us by the superintendents and the traveling men.

Q. Did you not say to Mr. Gill that the way he proposed to use the tables prepared by you was not a true statement of the case?—A. No, sir; I did not, emphatically.

Q. Did not Colonel McDonald agree with you then that they ought not to be used as grand totals of the operations of the Commission?—A. Emphatically, no, sir; he did not.

Q. Did not Mr. Gill say that he only wanted the grand totals and not the separate items?—A. No, sir; he did not.

Q. Is there not quite a difference between the number of eggs taken and the number of young fry distributed?—A. Yes, sir. Of course there is a number lost in incubation, and a number lost in transportation. The statements that I make up show that conclusively. It is all in detailed form.

Q. It shows the loss?—A. By incubation and transportation.

Q. In your opinion are the reports as to the production and distribution of fish, rendered to you from time to time, substantially correct?—A. Yes, sir; I judge they are, from my experience in the work. They appear so. The figures seem to agree. For instance, we make a transfer of eggs from one station to another. They are measured and estimated at the station which produces them. Then they are transported to the receiving station. When they are received they are remeasured and estimated, and a receipt is sent to our office, and we make a comparison, and the station that receives the eggs acknowledges a lower number received than were transported. That is due to shrinkage.

Q. And those receipts show a less number received than were transported?—A. There never was a greater showing; always less. I would like, inasmuch as there has been some question about the tables, to have them submitted. They are all tabulated in type-writing form, sixty or seventy pages of them.

Q. Have you ever been requested by the Commissioner to prepare any tables and to compile them in a manner which would show larger results than the regular reports received would show?—A. No, sir. Colonel McDonald is the strictest man regarding the correctness of work I ever worked under. He is very particular about it, and I always do my best to make the work as correct as possible.

Q. Have you ever made any tables to be used before the appropriation committees of Congress which would be an unfair exhibit of the business done by the Commission?—A. No, sir. I have never been instructed in that respect. I do not think that Colonel McDonald has ever attempted to influence any one to make a misleading statement. I do not think he would. So far as I know he is a most honorable and conscientious man. I have worked for him for ten years and that is my opinion of him.

At 12 o'clock and thirty minutes p. m. the subcommittee adjourned until to-morrow at 10 o'clock a. m.

WASHINGTON, D. C., *July 10, 1890.*

The subcommittee met at 10 o'clock a. m.

Present: Senators Stockbridge (chairman) and Squire.

TESTIMONY OF EDWARD S. RAYMOND—Recalled.

EDWARD S. RAYMOND, being recalled, testified as follows:

By the CHAIRMAN:

Q. You have already testified before the committee, have you not?—

A. Yes, sir.

Q. Since you testified before the committee have you had any conversation with the newspaper men who have brought these charges against the Commissioner and his management?—A. No, sir; I do not know who they are.

Q. Do you know of any reason why you should be recalled?—A. No, sir.

Q. If you know any reason why you should be recalled you can state it.—A. When I was here before I was not connected in any way with the Commission. I have been since that time and am now working in it, since July 1.

Q. In what capacity?—A. As clerk in the statistical division.

Q. Can you give us any information touching this inquiry as to any criticisms upon the management which you were not aware of before?—A. No, sir; I have no knowledge whatever of the management of the Commission, except what I have heard, and that of course you do not want me to state. I have no personal knowledge of it at all. If you remember, some time in April Senator Hoar spoke to you in regard to signing a petition for me for the librarianship. You said you had already signed one for Mr. Bliss, and that you cared only to sign one. I was an applicant for the position, and I do not know of any other reason why I should be called. I did not get the position.

Q. But you have been appointed to another position?—A. Yes, sir.

Q. You were appointed at the request of Senator Hoar?—A. No, sir; Senator Dawes.

Q. What is your salary?—A. Nine hundred dollars per annum.

Q. Did you take the place of any one who was discharged?—A. No, sir; the gentleman whose place I took is to be removed to the Museum. He is to have another position.

Q. You came in to supply his place?—A. Yes, sir.

Q. I do not know of any further questions to ask you.—A. I have nothing to say against Colonel McDonald or any person in the Commission. I do not know of anything. Of course all I know is what I hear. I have no personal knowledge of anything of the kind.

TESTIMONY OF SHERMAN F. DENTON.

SHERMAN F. DENTON, being duly affirmed and examined, testified as follows:

By the CHAIRMAN:

Q. Where is your residence?—A. My residence has been near Boston, at a place called Wellesley, but I am just at present living in Washington. I have been at the Fredonia Hotel for a few days.

Q. Are you in the employment of the Fish Commission?—A. Yes, sir.

Q. In what capacity?—A. Draughtsman—scientific draughtsman—drawing fishes, and such as that.

Q. When did your connection with the Fish Commission commence? How long have you been employed?—A. I have been a salaried member since December; but I worked for the Commission two years before that on piece-work, so much a piece.

Q. When were you appointed?—A. In December last.

Q. What is your salary?—A. A hundred and twenty-five dollars a month.

Q. Were you appointed by the present Commissioner?—A. Yes, sir.

Q. Have you seen from time to time various newspaper articles published attacking the management of the Commission?—A. Yes, sir.

Q. Can you give us any information as to any of the charges that were made?—A. I can not. I am outside almost entirely of everything of that kind. I simply draw fish for scientific purposes, and I feel as if I was outside of the Commission. I do not have any connection with it otherwise than simply the scientific drawings.

Q. Do you conduct your work at the Central Station?—A. Yes, sir; at the central building.

Q. What are your hours?—A. I work from 9 to 12 and from 1 to 4.

Q. Are you pretty prompt in your attendance?—A. Yes, sir.

Q. One of the charges is that there is laxity on the part of the employés?—A. Yes, sir; so I understand. I am always on hand unless something serious happens.

Q. I will read you the resolution under which this inquiry is proceeding:

Resolved, That the Committee on Fisheries be, and it is hereby, instructed to make early inquiry into the administration of the affairs of the United States Fish Commissioner's office, and especially in respect to the changes in the force, compensation paid to employés, and any alleged favoritism, or other undue administration, and report to the Senate thereon.

Now, in respect to the changes in the force, do you know of any changes that have occurred?—A. I know some changes have occurred. I know Mr. Blaisdell was discharged.

Q. Do you know for what reason?—A. I heard it was for some interference, writing some letters, it seems to me, or something of that kind. That is simply what I have heard. I did not know of it until some time after it occurred.

Q. Do you know anything about any favoritism being exercised there?—A. No, sir. I will say in connection with that, that I came down to Washington a total stranger to every one and did not know a single inhabitant of the city. I exhibited my work and went to work for the Commission and have been always treated fairly and squarely.

Q. You do not know of any one being treated with special favoritism?—A. No, sir; I do not to my knowledge.

TESTIMONY OF WILLIAM P. SEAL.

WILLIAM P. SEAL, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Your residence is in Washington?—A. I am living at the present time in Alexandria. My real home is in Philadelphia.

Q. Are you in the service of the Fish Commission?—A. Yes, sir.

Q. In what capacity?—A. I am superintendent of the aquaria.

Q. How long have you been in the employment of the Commission?—

A. My regular employment dates back, I believe, to about the first of November, 1888. Prior to that I had been engaged in special work under Professor Baird at his solicitation at Wood's Holl during the summer months. I entered the service of the Commission at Professor Baird's solicitation. In fact, for three or four years prior he endeavored to get me to take a place in the Commission, but could not afford to pay me what I desired.

Q. Are you employed permanently by the present Commissioner?—

A. Yes, sir; I was given a permanent place by Professor Goode when he was acting as Commissioner. I was then at Wood's Holl. He had me come to Washington, and had me appointed permanently.

Q. What was your compensation at the time of your permanent appointment?—A. Fifteen hundred dollars, and it is still the same.

Q. Are you acquainted with what is known as the McDonald filter?—

A. Yes, sir; I am fully acquainted with it, and the probable cause of its development.

Q. Is it used here to filter water which is used in the Commission?—

A. Yes, sir. I would like to give a history of the causes of that filter. I think it is one of the most desirable things that is now being developed in regard to the work of the Commission.

Q. If you do please do it satisfactorily to yourself and as quickly as you can, because we have got a great many witnesses who are supposed to know about it.—A. I might go back to the Centennial Exposition in Philadelphia. The difficulties encountered in providing clear water at the Centennial at Philadelphia were very great. At the New Orleans Exposition the aquaria exhibit of live fish was an absolute failure, because of the difficulties in filtering the water. I do not know the method they employed there, but it was one of those methods of coagulating by the use of alum. At the Centennial Exhibition I had charge of the aquaria exhibits. We had very great difficulty there. The water of the Ohio River was so muddy that it was absolutely necessary to filter the water, and we used a filter, one of the only kind by which it is possible to filter enough water for our uses, using alum for the coagulation of sediment in the water, the albuminous sediment, and we met with a number of accidents resulting with loss of the fish. We, of course, finally overcame the difficulties and made the exhibits successfully; but there was always a danger in the use of those things. The use depends upon the careful watchfulness of the attendants employed. They have got to understand them thoroughly, and there are many things which the ordinary man will lose sight of and forget, and for that reason accidents are constantly resulting.

That stimulated Mr. McDonald to develop a filter which should be absolutely automatic and which should have none of those characteristics which would be injurious, and which should be automatic, cleansing itself automatically. That is the history of that filter. It is absolutely necessary in the establishment of aquaria that there should be something of the kind. I myself, of course, consider that it is one of the most valuable things that has been recently developed in connection with the work of the United States Fish Commission.

Q. Let me ask you a question right there. Is the filtered water used in hatching the eggs?—A. No, sir; but in the keeping of the fish in the aquaria, and it is the desire, although it is not an absolute necessity, to eventually develop these filters to such an extent that filtered water can

be used in the hatching work, because the eggs become clogged with sedimentary deposit which accelerates the growth and development of fungus, and moreover it is difficult for a man to see eggs as closely as he ought to and to cleanse them as he should.

Q. So that you think it would be valuable in connection with the hatching of the fish as well as in the aquaria?—A. I have no doubt of it. I believe that although, in nature, fish are subjected to the same influences and to all the dirt and all that, that it must result in injury to a very great extent.

Q. Has this filter been perfected to such an extent that it is now in successful use?—A. It is now in practical use, and I can make a statement regarding the use of it which may be considered extraordinary by any one connected with the handling of fish.

Q. It is in use at the Central Station, is it not?—A. Yes, sir.

Q. Is it in use anywhere else?—A. No, sir; not that I know of. We have kept trout there lately during this hot weather at a temperature of 75 degrees without ice—of course it would be, without ice, at 76 degrees—by the use of a little jet of water injected into this aquaria through the McDonald filter. The last of these fish died yesterday or night before last, when the temperature had attained 82 degrees, something extraordinary and unheard of heretofore. The idea is that a little jet of water impinging on the surface of the water with considerable force carries with it a large amount of air, disperses it in minute bubbles and keeps the water constantly charged with that. Ordinarily, there is not at that temperature air enough to support life. It is filtered through tiles. It is not automatic in its methods, and is not possible to pass it through with force as is done in the McDonald filter, so that you may drive this water into the aquaria. It is objectionable, of course, because it has to be cleaned by hand very frequently, while the McDonald filter is automatic in that respect, cleaning itself.

Q. Has this McDonald filter, which is in use, been constructed at the machine-shop at the Central Station, or was it made outside?—A. I believe—I could not say positively about that—that it has been constructed there at the machine-shop. The castings have been made outside. I think it has been constructed there.

Q. The tiles were made outside?—A. Yes, sir.

Q. But put together and put in working order by the machinist at the station?—A. Yes, sir.

Q. And it is in use for the benefit of the station?—A. Yes, sir; and it was developed for use in connection with the work of the Fish Commission.

Q. You have been familiar with the whole of it?—A. Yes, sir; and have been in consultation with Colonel McDonald about it during all its different phases of development. I have taken a very deep interest in it.

Q. Do you know whether any of those filters have been made and sold to outside parties?—A. I do not think so. I know that one was sent to the Franklin Institute, at Philadelphia, at the request of Dr. Wall, the secretary of the Franklin Institute, and editor of the *Manufacturing Builder*, for investigation by them, because the sanitary engineers of the country are very much interested in the question of the sanitary filtration of water. At his request, Colonel McDonald sent one on to Philadelphia. But that is Colonel McDonald's.

Q. For exhibition and examination?—A. Yes, sir. I do not think that one has been sold. I do not think that any others have been made,

except one that is in use there and one that Colonel McDonald has in his own house, and probably three there in the station.

The drinking water of the station is also filtered by this filter, and I understand that at the Gloucester (Massachusetts) Station, it is absolutely impossible to get drinkable water there, and therefore it would be very valuable there. It is on an island in the harbor at Gloucester, Mass.

Q. So that you consider it a valuable invention?—A. I consider it a valuable invention in connection with the work of the United States Fish Commission, without any question.

Q. It has been charged in newspaper articles recently that the employés of the department were very careless as to the hours; that they came late and went early. What is your observation on that subject?—

A. My observation is that the organization of the Commission, the general efficiency, is way beyond anything that has been ever known before. When I came to Washington there was a Central Station, but the offices of the Commission were not there. Some time in 1888, the spring or late winter, I was made superintendent of the Central Station. I found a very loose state of affairs there. Of course it was carried on. Colonel McDonald was chief of distribution, in charge of all fish-culture work and distribution, and all that.

Q. Professor Goode was acting as Commissioner?—A. Yes, sir; but Colonel McDonald had his office on Massachusetts avenue. The general office of the Commission of course was not cognizant of what was going on there. I found that card-playing was carried on at the office of the Commission; that the employés were playing cards and carrying on in a way which was not proper. I stopped it at once, and encountered a great deal of hostility on account of it. I reported it to Colonel McDonald, and he said if he had ever known of it or had any intimation of it, he would have stopped it peremptorily. I believe the very men who are making complaints of inefficiency were the very men who were engaged in the looseness at that time, some of them at least. I can see every month an increase in the efficiency of the service, as fast as it is possible for the Commissioner to make the desired reforms.

Q. Has the number of employés been increased since your connection with the Commission?—A. About that I am unable to say. I know very little about those things. I have heard a great many things of the kind, rumors, but they are unknown to me—things that I should have been cognizant of if true, but I never noticed them.

Q. Have you any knowledge of any favoritism in the management of the office on the part of Commissioner McDonald? It is charged that he has his favorites who are favored in various ways.—A. I do not think so. I have never noticed anything of the kind. I believe that Colonel McDonald will advance any worthy man. I have never seen him advance a man on account of political considerations or favoritism, but I think he is thoroughly conscientious; that it depends upon a man's ability. The fact is that some men are growing here as elsewhere; they are developing, developing strength; they are showing ideas and ability.

Q. And he is inclined to recognize these men?—A. Yes, sir; they get along faster than others, and that promotes jealousy. There are men who are occupying positions beyond their merits, but who really feel they are being —

Q. Discriminated against?—A. Discriminated against, because they are not promoted faster; when the real truth is that they are already promoted beyond their deserts.

Q. Do you know Mr. McCormick, who is in the employ of the Commission?—A. No, sir; I do not know him either by name or sight.

Q. Do you know a young man by the name of Lewis?—A. I know Lewis; yes, sir.

Q. He is said to be a relative of Colonel McDonald.—A. Yes, sir; I believe he is a nephew.

Q. Is he a competent employé?—A. I believe so. I believe thoroughly so, as far as his duties are concerned, which are of a clerical nature, principally. I think he is an admirable young man. There is one thing certain, he attends to his own business and does not bother anybody else or anybody's else business, and attends to his work.

Q. Do you know of the reasons which led to the dismissal of Mr. Blaisdell from the service of the Commission?—A. Only by hearsay. I have never spoken to him in my life. I have passed him hundreds of times, but have never spoken to him.

Q. You do not know the reason of his dismissal?—A. I met Mr. S. C. Brown one day, who has already testified here, and he gave me a statement of the case. I, myself, being a soldier of the late war, was interested. I asked Colonel McDonald about it and he told me his side of the story, and that is all I know about it.

Q. What did he tell you was the reason for Mr. Blaisdell's dismissal?—A. What Mr. Brown told me.

Q. I mean Colonel McDonald?—A. Colonel McDonald said that Mr. Blaisdell had been employed under a special appropriation, I believe, for a survey of Great Falls, or something in connection with the establishment of a fishway there, originally; that when that was completed he begged, I believe, if I am not mistaken, and brought pressure to bear to get a permanent appointment, but the Commissioner was not disposed to appoint him, or could not give him a place, could not find any place, and finally I believe he provided for him temporarily with the understanding that it was to be a temporary appointment; that he was finally reported for incompetency, I think, and discharged for incompetency finally; but afterwards, it seems to me he brought some pressure to bear—influence, to bring about his appointment to some other position, as librarian, or something of that kind.

Q. But he was not appointed?—A. He was not appointed.

Q. Have you ever been at the Leadville Station?—A. No, sir.

Q. Have you ever been at the Put-in Bay Station, Lake Erie?—A. No, sir.

Q. Your duties have been here?—A. Yes, sir; I am familiar with Mr. Gay. I know something about the charges regarding Mr. Gay. I know something about Mr. Gay.

Q. What is your opinion of Mr. Gay's fitness for the position which he occupies?—A. Well, sir, Mr. Gay was, I believe, and is generally considered, as being one of the most efficient commissioners the State of Pennsylvania ever had. When he was commissioner of the State of Pennsylvania, he was the active member of the board.

Q. He was president of the board?—A. Yes, sir; he supervised all the work personally, the other members not having much knowledge of fish-culture, and Mr. Gay's reputation in Pennsylvania is very high. Of course the boards change with a change of administration. Of course, when Governor Beaver was elected Mr. Gay and the other members of the board dropped out. The idea seems to prevail among some men in the employ of the Commission that a man who is competent to manipulate eggs, or a man who is competent to take spawn, or a man who is competent to carry fish on a car, is an efficient culturist. That

idea is very wrong. Those are branches of fish work, but not fish-culture. They imagine that a man who understands one of these branches of the work is an efficient culturist and knows everything about it, and that they have the broad and comprehensive ideas which are necessary to conduct a great organization like the Fish Commission. Mr. Gay is considered by the Commission a thoroughly competent man, a man who is a practical business man, of practical business training, thoroughly competent to attend to his work.

Q. Do you know the man who is in charge of the Leadville Station?—

A. Mr. Robinson; yes, sir.

Q. Do you know anything about his habits, whether he is a temperate man or otherwise?—A. When Mr. Robinson was younger, and a number of the other men were younger, before I went to the Commission, I have heard that they drank some. I have myself never seen Mr. Robinson under the influence of liquor, or in any such condition that he was not competent to attend to his business. I consider him an honest, honorable, energetic public servant.

Q. A good man to be in charge of a station?—A. Yes, sir; I think so. He is one of the class of men who are rising by their own merits, and who encounter the envy of others. These attempts to damn his character have occurred before in the Commission.

Q. And from your knowledge of him I understand you to say that you do not believe he is intemperate, habitually intemperate?—A. No, sir; I do not believe it.

Q. One of the witnesses testified that he was?—A. He may take a drink occasionally. I do not know anything about that. Many men do, and it does not unfit them for their business. Those things are private and personal affairs, which have nothing to do with their official duty.

Q. Unless they interfere with their duties?—A. Unless they interfere with them.

Q. I will read you the resolution under which we are conducting this inquiry, and then I will ask you to make any observations touching these points which occur to you.

Resolved, That the Committee on Fisheries be, and it is hereby, instructed to make early inquiry into the administration of the affairs of the United States Fish Commissioner's Office, and especially in respect to the changes in the force, compensation paid to employes, and any alleged favoritism or other undue administration, and report to the Senate thereon.

Now, if you will, in a concise and brief way, give us any information you have on those points, we would be glad to have it.—A. I believe I can say in a few words what will cover it all. If I would leave the United States Fish Commission to-day, and were desirous of injuring Colonel McDonald or the administration of the United States Fish Commission, I do not know of a single thing I could lay my hands on which I think would detract from its creditable record. I do not know of a single thing. I have heard much stuff which must be utter nonsense and absurdity. I have heard charges of drunkenness on the floor of that station, and all that. It certainly would have come to my knowledge if true. Many of those things that S. C. Brown told me concerning the drunkenness of Mr. Worth I had absolutely never heard of before, and scandal flies very rapidly in a place of that kind. It is very strange if it were so that I should not have known of it. Mr. Worth is one of those men who is growing in the Commission. In 1888 he was vice-president of the Maryland Fishery Society, which will show you something of his standing. He is a growing man, and as he

grows of course he will deserve and will get promotion, because the efficiency of the organization, the success that the Commissioner himself depends on, is in choosing the proper subordinates to carry on his work; and if every individual who thinks that he ought to have preferment would be allowed to have his way, you can imagine what kind of a state of things it would be.

Q. It is charged that the Commissioner has appointed to positions in the Commission a large number of his relatives or connections. Do you know anything about that?—A. Nothing, except what I saw in the newspapers. There is young Lewis, whom you spoke about. By the way, you asked me about Mr. McCormick. I do remember now that there is a stenographer who is employed in one of the offices, a quiet, admirable young fellow. I do not know anything about him or the circumstances of his appointment.

Q. Have you any reason to believe that Mr. Lewis is a young man of intemperate habits?—A. No, sir; I believe, on the contrary, that his habits must be exactly the opposite. I do not believe he drinks. If he does I do not know it; there is no indication of it. There is another Lewis, however, who is out at Leadville. I think he was appointed by Professor Baird, and like Mr. Robinson, and like a number of them there, before I came there they used to drink more or less, but I have never seen Mr. Lewis under the influence of liquor at all. If he drank, as most of them did, it was after their hours of duty. I do not know anything about it. I have often heard talk about it. I picked up a cork of a beer bottle in the yard the other day. I might as well take that as evidence of drunkenness as I might any other thing.

Q. You found a beer bottle on the premises?—A. Yes, sir.

Q. Do you know anything about the practice of selling the fish that are taken in the seine at the Fort Washington Station, taken for the spawn of course?—A. I have never heard anything except the newspaper charges. Of course the fish are taken there for the purpose of getting the eggs in them. They are afterwards sent to market and sold.

Q. Do you know what is done with that money?—A. No, sir; I do not know anything about those affairs. I suppose it is properly accounted for.

TESTIMONY OF LUTHER M. CORNWALL.

LUTHER M. CORNWALL, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Please state your business.—A. I am in South Washington; a dealer in groceries and green goods.

Q. What do you know about the Fish Commission?—A. I have been supplying the traveling cars and station at Fort Washington with eatables for the men who have lived on the cars and traveled.

Q. Are the rations supplied by the Government or by the mess?—A. By the mess, as I understand it.

Q. Then your dealings are not officially with the Department?—A. I very seldom got my money from the Department. Once in a while I would get a check from Mr. Herbert Gill, but the man who had charge of the mess would generally pay me off in money. Sometimes if there was delay they would make up an account and Mr. Gill would pay it.

Q. Whatever Mr. Gill paid you understood was charged to the men?—A. Yes, sir.

Q. Are you in the habit of furnishing as part of your supplies any liquors?—A. No, sir.

Q. Cigars?—A. No, sir. If a man got that it was charged simply to his own individual account, on his own separate mess. Sometimes at Fort Washington they used to get something. It was their own individual account and they paid that personally. It had nothing to do with the mess-book. They always carried a private pass-book of their own.

Q. Have you at any time furnished wines or liquors to employes at Fort Washington?

The WITNESS. Have I sent them?

The CHAIRMAN. Have you furnished them with wines or liquors?

A. No, sir.

Q. Private individuals?—A. Sometimes they would send up to me to send them some liquors and I would send it down by the boat. It would not go with their mess at all.

Q. Whom have you sent liquor to there who was in the employ of the Fish Commission?—A. Indeed I do not know now. They had some men who were working on the shore.

Q. Have you ever sent any liquors to Mr. Worth, who was in charge there?—A. No, sir.

Q. I will read you the resolution under which we are making this inquiry, and if there is anything that occurs to you that would come within that scope, I will ask you to give it to us in your own way :

Resolved, That the Committee on Fisheries be, and it is hereby, instructed to make early inquiry into the administration of the affairs of the United States Fish Commissioner's office, and especially in respect to the changes in the force, compensation paid to employes, and any alleged favoritism or other undue administration, and to report to the Senate thereon.

Can you give us any information on those points?—A. I can not say that I can. There is only one thing that I can say. I was furnishing them with substantial goods, just as they wanted, subject to their order, and I wanted to cater for the trade this last season, and also year before last, and I went to Mr. Worth and he told me he had already picked out a man to do his dealing with this year. Consequently I did not get it and said nothing about it. They paid me good, fair prices for my goods, and I told them that if they wanted to put it out on contract I would make a bid for it. He said no; the men did it themselves and it was left to them with whom they should deal.

Q. You did not charge that up to the general management of the Fish Commission?—A. No, sir. There were mess-book No. 1 and mess-book No. 2. There were three mess-books. Colonel McDonald had his own book and Mr. Worth had his. The men in the hatchery had theirs. Each bill was paid separately. If the bill was \$100 and there were ten men in the mess, each man was taxed \$10. All bills were paid up promptly in cash money.

Q. It has been charged that the fish taken at the Fort Washington Station, after taking the eggs, were sold, and that that money was used for the purpose of entertaining visitors, for the purchase of wines, cigars, etc. Have you any knowledge on that point?—A. No, sir; none whatever.

Q. You do not know anything about how that was handled?—A. No, sir. I go around the wharf every day and around about that way, but I have never seen anything of the kind in any way. The only way I know how you could find out about the fish business is to get some of the fish men to whom the fish were consigned.

Q. I thought you might know something about the expenditure of that money.—A. No, sir. Since Mr. Worth has been there our dealings have been very small.

Q. Do you know with whom they have dealt during the last year?—A. A man by the name of Tolson, I think, on the corner of Seventh and E streets. All my dealings have been perfectly friendly and nice. I have nothing to say only that I did not get there.

TESTIMONY OF JOHN E. BROWN—Recalled.

JOHN E. BROWN, being recalled, testified as follows:

By the CHAIRMAN:

Q. On your former examination did you testify to all matters of any importance within your knowledge connected with the present management of the Fish Commission?—A. Yes, sir; the length of time I had been in, what I received, and the general conduct of the Commission. You asked me how it was run in regard to running out and in. I told you I thought it was a great improvement upon what it had been for the previous eight years I had been there.

Q. You do not think of anything important that you could inform us about, except what you did testify to?—A. Not a thing in the world, sir. In my testimony about the price that was paid, the expenses of running the Commission, I may not have had it exactly right, because I could not judge; there was so much connected with it that I could not tell.

Q. Do you think there is more help employed about the station here than is necessary to do the work properly?—A. I could not answer that question, because I do not know what their duties are.

Q. In your own department you have men under you, have you not?—A. Indirectly; yes, sir.

Q. Is there more of that sort of help than there is any need for?—A. No, sir; there is less than there has been before. I could not swear positively as to that.

Q. In the general work, in consequence of the establishment of new stations, the amount of property which you have charge of has increased, has it not?—A. Yes, sir; the distribution has greatly increased. There has been a great increase in the work of distribution. We are doing a great deal more work, work that they have never done, different kinds of work.

Q. If you have thought of anything new to testify about in connection with the affairs of the Commission, its management, you will please state it in your own language.—A. I declare I know but very little about the management of it. I know in the department of distribution that it is strictly and carefully attended to all through. I do not know of a more industrious or hard-working man or a man more interested in the work than Mr. Moore. I am directly under him and have to get my instructions from him. He is very strict and very regular with all the employés. There are no favorites.

Q. Are these employés who come under your immediate control prompt in their hours of coming and leaving?—A. Yes, sir. If anything occurs which I have anything to do with, my orders are to report it immediately; if anything is out of the way in any way my orders are to report it.

Q. You think the purpose of the Commissioner is to have things done in a business-like and prompt way?—A. I certainly do.

TESTIMONY OF W. A. DUNNINGTON.

W. A. DUNNINGTON, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Is your residence in Washington?—A. Yes, sir.

Q. Are you connected with the Fish Commission?—A. Yes, sir.

Q. In what capacity?—A. I have charge of car No. 2.

Q. Do you ever meet with losses of young fish in the distribution?—
A. Yes, sir; occasionally.

Q. Are these losses reported and recorded?—A. Yes, sir.

Q. Each trip?—A. Yes, sir.

Q. They are reported to the central office?—A. Yes, sir.

Q. Have you ever made trips with Fish Commission cars where members of the party were not Government employés?—A. Why, no, sir; except in Illinois when we were doing State work.

Q. Building up the indigenous fish?—A. Yes, sir; on purely State trips for the State of Illinois.

Q. Who were then allowed to ride in the cars?—A. Friends of Dr. Bartlett, who is the Commissioner of Illinois. I do not remember who they were now.

Q. Did their accompanying you involve any expense to the Fish Commission?—A. None whatever.

Q. What were the duties of such individuals who accompanied you?—
A. They simply accompanied us on the trip to see how the work was done. They did not go with us to do any of the work at all or to assist in the work.

Q. Have you ever seen or heard of Mr. Worth, who is in charge of the station here, using intoxicating liquors?—A. No, sir; I have never seen him use any.

Q. You have never seen him intoxicated?—A. No, sir.

Q. Have you visited Fort Washington during the last season?—A. No, sir.

Q. Have you ever visited Fort Washington?—A. Not since Mr. Worth had charge of it.

Q. Have you ever been to the Leadville, Colo., Station?—A. No, sir; I have not.

Q. What is your compensation?—A. One hundred dollars per month.

Q. Does the Government furnish you rations on these trips?—A. No, sir; we are supposed to pay our own subsistence.

Q. You have a mess?—A. Yes, sir; \$15 a month it is supposed to cost each man.

Q. You pay that yourselves?—A. Yes, sir.

Q. Have you ever known these distribution cars having been furnished with cigars, champagne, etc., at Government expense?—A. No, sir.

Q. You are not in the habit of using wines or liquors to excess?—
A. No, sir.

Q. How long have you been in the employ of the Commission?—
About seven years.

Q. You were first employed under Professor Baird's administration?—
A. Yes, sir.

Q. Since Colonel McDonald came in charge has your compensation been increased?—A. Yes, sir; it was increased in the first year of his administration, when I took charge of the car.

Q. Is the pay of the messengers in charge of cars uniform?—A. Yes, sir.

Q. Have you ever observed any evidence of favoritism regarding the employes of the department on the part of the Commissioner?—A. I have not.

Q. Do you know of any appointments made by Commissioner McDonald of relatives of his or connections?—A. There are some who are said to be relatives of his.

Q. Can you give their names?—A. R. E. Lewis, Frank McCormick, and C. C. Lewis.

Q. Are the Lewises brothers?—A. Yes, sir.

Q. They are said to be connections of the Commissioner's?—A. Yes, sir.

Q. Are they efficient and good officers of the Government in their departments?—A. As far as I know, yes, sir.

Q. One of the Lewises is stationed at Leadville?—A. Yes, sir.

Q. Do you know anything about his habits; is he intemperate?—A. I can hardly answer that, because I do not know. I of course have heard these things.

Q. You know him personally?—A. Oh, yes, sir.

Q. Do you consider him an intemperate man?—A. I think not, sir.

Q. Do you know Mr. McCormick personally?—A. Yes, sir.

Q. Is he a stenographer or messenger about there?—A. I do not know, really, what his duties are. I think he is in Captain Collin's office, but what he does I can not say.

Q. Now I want to make this thorough. I want you to tell me all you know that bears upon this matter. I will read you the resolution under which this inquiry is proceeding.

Resolved, That the Committee on Fisheries be, and it is hereby, instructed to make early inquiry into the administration of the affairs of the United States Fish Commissioner's Office, and especially in respect to the changes in the force, compensation paid to employes, and any alleged favoritism or other undue administration, and report to the Senate thereon.

If you know anything about any of those matters which is of importance, just state it in your own language?—A. Really I do not know of any. I do not know of any favoritism or any changes that have been made that would lead any one to suppose that they were made through favoritism.

Q. Changes have been made for the good of the service, so far as your knowledge goes?—A. Yes, sir.

Q. You say Professor Baird increased your salary and that of the other men in charge of the distribution cars. How much was that increase?—A. It was Colonel McDonald—\$25 a month; that is, my salary was increased. I came in under Colonel McDonald; that is, I took charge of the car under his administration. Then my pay was increased to the same amount as the other two were receiving.

Q. Had the other two been receiving \$100 a month for some years? A. Yes, sir.

Q. When you took that place your pay was put up to their pay?—A. Yes, sir.

Q. What can you say as to the percentage of loss in the transportation of the fry which you distributed last year as compared with former years; that is, were the fish healthy and strong and the loss about the same, or was it greater?—A. My experience this year with shad is that the loss was greater.

Q. To what did you attribute that?—A. I do not know, unless it was

the season. It was a very bad season for gathering eggs, and the fish that were hatched seemed to be very weak.

Q. Did you attribute that to any bad management or negligence on the part of the employés?—A. Oh, I think not.

Q. It was something that nature was responsible for?—A. Yes, sir.

Q. As to the number of fish put in a can during the last year or two, have they been in the habit of putting more or less in cans than formerly?—A. I do not think there has been any increase, so far as my experience goes. I think about the same number.

Q. Have you been on long trips or short trips?—A. Most of my trips have been south—short trips.

Q. Could they put more fish in a can safely on short trips than on long trips?—A. Oh, certainly, sir.

Q. It has been charged that the general discipline of the office was very lax here; that the employés came and went about as they pleased, etc. Can you from your observation say anything on that point?—A. Not as far as I can see. I think every one seems to be there on time and leaves when the office hours close. That is as far as I know.

Q. I can not think of anything else unless you have something in your mind within the scope of this inquiry which I have not drawn out by my questions.—A. I can think of nothing else.

Q. What do you think about the general management from a business point of view. Is it systematic and business-like or otherwise?—A. I think so.

Q. What do you do at seasons of the year when you are not employed with the cars?—A. Since I took charge of this car we have been employed all the season round.

Q. I had in mind the taking of spawn. Of course, that is at a certain season, but the car-service extends through the year?—A. Yes, sir; the past two years we have been gathering native indigenous fish in the Mississippi Valley, and that has extended our work very much.

Q. Do you consider that a valuable branch of the work of the Commission?—A. I think it one of the most valuable that we have.

Q. You gather them where they are to be procured and distribute them in the streams and waters of that region?—A. All throughout the country where the waters are adapted to those kinds of fish.

Q. If you have any criticisms to make you may do so.—A. As far as I know everything is conducted right, and I have no complaint to make at all.

TESTIMONY OF Z. V. HARRIS.

Z. V. HARRIS, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Where do you reside?—A. Washington. My home is in North Carolina.

Q. Have you ever been in the employ of the United States Fish Commission?—A. Yes, sir.

Q. Are you now?—A. No, sir.

Q. When did you enter it?—A. I think it was on the 3d of April, 1888.

Q. When did you leave it?—A. On the 1st of June.

Q. What were your duties during that time?—A. I was at the developing station at Fort Washington. My duties were to develop the shad eggs as brought in and ship them to this city, the Central Station.

Q. Who was in charge of the station at the time you were there?—
A. S. G. Worth.

Q. What do you say as to Mr. Worth's habits; is he an intemperate man?—A. He is a drinking man.

Q. Have you ever seen him under the influence of liquor?—A. I have.

Q. On more than one occasion?—A. Yes, sir; I have.

Q. So that he was incapacitated for attending to his duties?—A. He was not at the station; he was up at his house all the time, which was about a half a mile away.

Q. Upon the hill?—A. Yes, sir. He came down to the station afterwards.

By Senator SQUIRE:

Q. For how long a period was he incapacitated for the performance of his duties?—A. Some days he would be at the house and would not come down to the station in two or three days.

By the CHAIRMAN:

Q. You say he was intoxicated?—A. Oh, yes, sir; he was drunk.

Q. You saw him at his house?—A. I saw him when he got off the boat and came up the hill. I have seen him down to the station drunk, under the influence of whisky.

Q. You spoke of his getting off of the boat. On what occasion was that?—A. He generally went every time. He would take the fish that were caught by seine in a little steam launch and tow them to Washington here, and this was on one occasion when he was returning.

Q. What time of the day was that?—A. It was in the afternoon. That was one time, and one time he came back very early in the morning. He went up about 2 o'clock in the morning and came back about 7.

Q. He was intoxicated on both of those occasions?—A. He was, sir.

Q. Were there any other employes there who indulged in the use of ardent spirits?—A. They would take a drink occasionally; they were never drunk.

Q. He was the only man at the station you have ever seen drunk?—
A. The only one whom I have ever seen drunk at the station.

Q. Why did you leave the employment of the Commission?

The WITNESS. Senator, can I explain that in my own way?

The CHAIRMAN. Certainly.

A. I received a letter when I was home, in North Carolina, from Senator Ransom—the letter is on file in the Fish Commission now—saying that he had secured for me in the United States Fish Commission a permanent position. I came on here, and gave that letter to Mr. S. G. Worth here at Washington. He put me to work here in Washington and I worked about ten days. He then sent me to Fort Washington. He read this letter. He came to me soon afterwards, about the latter part of May, and told me he had been wanting to speak to me about my position; that it was not permanent. I then asked him the question why he did not say so when he read Senator Ransom's letter, and he made some reply. I have forgotten the reply he made to me. So I was discharged by Mr. Worth.

Q. Were you discharged at the close of the season's business?—A. Yes, sir; at the close of the season's business.

Q. You remained through that season?—A. Yes, sir; I remained through that season.

By Senator SQUIRE:

Q. How long were you there?—A. From April, I think it was either

the 5th or 6th—between the 3d and 7th—until the 1st of June—about two months.

By the CHAIRMAN:

Q. Can you give us the names of any other persons who were employed at the station during the time you were there?—A. Mr. John Paul Bauer, Capt. L. Harron, a Mr. Morgan, a Mr. Spencer. The other gentlemen I have forgotten; there were several other men. I have forgotten their names.

Q. Did you apply to Commissioner McDonald for retention in the service?—A. No, sir; I did not. Senator Ransom went down to see him in my behalf.

By Senator SQUIRE:

Q. Colonel McDonald was the then Commissioner?—A. Yes, sir.

By the CHAIRMAN:

Q. Do you know what he told Senator Ransom?—A. I do not. My father wrote to Mr. Worth asking why I was discharged, and he gave as the reason why that there were too many North Carolinians in the Fish Commission.

Q. Do you know what was done with the fish taken there?—A. They were taken for the spawn.

Q. What did they do with the fish?—A. They sold them.

Q. They sold them in Washington?—A. Yes, sir.

Q. Do you know what was done with the money received from the sale of the fish?—A. I do not. I have heard, but I do not know myself.

By Senator SQUIRE:

Q. Do you know of any instance where it was expended for liquor?—A. I have only heard; I do not know.

By the CHAIRMAN:

Q. You have never been employed at the Central Station here?—A. Only for the ten days I have mentioned.

By Senator SQUIRE:

Q. Was it customary to have liquor around?

The WITNESS. Around the Central Station?

Senator SQUIRE. Yes, sir.

A. I never saw any there.

Q. How about Fort Washington?—A. Yes, sir.

Q. Will you state a little more fully about liquor being around there? What do you mean?—A. I mean this, that if a man felt like taking a drink that he could take it. I have taken a drink there myself.

Q. He helped himself?—A. Yes, sir.

By the CHAIRMAN:

Q. Do you mean it was supplied to the men?—A. No, sir.

Q. Do you know of any liquor being kept by any one connected with the Fish Commission for sale?—A. No, sir.

Q. The men kept it in a flask for themselves?—A. Yes, sir. Being in the water so much, it was beneficial to take a drink.

By Senator SQUIRE:

Q. The question in my mind was merely with reference to the liquor that was alleged to have been bought with the money procured from

the sale of fish; whether that liquor was kept accessible to the hands, if there were any such liquor. Aside from any liquor there might have been kept by the men personally, was there any liquor for the hands so that the hands were supplied?—A. No, sir.

By the CHAIRMAN:

Q. You say you took a drink occasionally?—A. Yes, sir.

By Senator SQUIRE:

Q. Where did you get it?—A. On the steamer *W. W. Corcoran*.

By the CHAIRMAN:

Q. It touches there?—A. Yes, sir. I would like to explain why I took it. I am not a drinking man. Being in the water handling eggs, in the mornings my hands would be so cramped that my whole system would be chilled, and at times working late at night, from 7 in the morning until 2 in the morning, working sometimes on Sunday also, I felt it would do me good. I took it more as medicine than anything else.

Q. To brace you up?—A. Yes, sir.

Q. State in a general way how the work was conducted at the station; whether it was systematically conducted and well done, or otherwise, while you were there.

The WITNESS. In the station?

The CHAIRMAN. The operations of the seine and the general operations.

A. There were two of us in the station, Mr. Morgan and myself. We received the eggs as they were brought in by the spawn-takers. Then we began to develop them. We would get them like to-day and to-morrow we would ship them to Washington. Only two of us worked at the station at that time.

Q. You took good care of the spawn brought in and shipped the eggs in proper condition to the Central Station?—A. Yes, sir. Mr. Morgan was in charge.

Q. I will read you the resolution under which we are proceeding, and then ask you to give us any information which you have not already given touching these points. The resolution reads:

Resolved, That the Committee on Fisheries be, and it is hereby, instructed to make early inquiry into the administration of the affairs of the United States Fish Commissioner's office, and especially in respect of the changes in the force, compensation paid to employes, and any alleged favoritism or other undue administration, and report to the Senate thereon.

Now, that indicates the general scope of our inquiry. If you have any knowledge touching any of these matters we would be glad to have you give it to us.—A. I have only my own case; that is, being promised a permanent position.

By Senator SQUIRE:

Q. What was your salary?—A. Forty-five dollars a month.

Q. There was no change in your wages during the time you were there?—A. No, sir.

Q. Were you satisfied?—A. No, sir.

By the CHAIRMAN:

Q. Was the salary of other men who did the same work the same?—A. Some of them were in there longer than I was and received more money, but I did not think it was enough for the amount of work I was doing, the number of hours and Sundays, too, that I worked.

By Senator SQUIRE:

Q. Did you make application for an increase?—A. No, sir; I did not. I was going to make application on the 1st of June, but I was discharged.

By the CHAIRMAN:

Q. You say you were promised a permanent position. Who promised you a permanent position?—A. This letter that I referred you to from Senator Ransom, telling me to come on to Washington, that he had secured me a permanent position.

By Senator SQUIRE:

Q. It was made to him. You took it for granted that what he said was correct?—A. Yes, sir.

By the CHAIRMAN:

Q. Do you know who made the promise to Senator Ransom?—A. No, sir; I do not.

Q. Can you give us any information which we have not been able to bring out?—A. That is all I can remember.

At 12 o'clock and 30 minutes p. m. the subcommittee adjourned until to-morrow at 10 o'clock a. m.

WASHINGTON, D. C., *July 11, 1890.*

The subcommittee met at 10 o'clock a. m., pursuant to adjournment.
Present: Senators Stockbridge (chairman) and Squire.

TESTIMONY OF HARRY E. QUINN.

HARRY E. QUINN, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What is your name?—A. Harry E. Quinn.

Q. Where do you reside?—A. My temporary residence is Washington. I am a citizen of Trenton, N. J.

Q. Are you in the service of the Fish Commission?—A. No, sir; I severed my connection with the Fish Commission when Professor Baird died.

Q. You were in the service before that?—A. On a detail from the Navy Department for about a month or so for each year, for about ten years.

Q. In what branch of the service?—A. Distribution.

Q. Have you known anything of the administration and conduct of the Commission since you left?—A. Absolutely nothing. I wondered why they sent for me. My connection with the Fish Commission ended with the death of Professor Baird.

Q. You have no knowledge of its operations?—A. Nothing. I have heard a great deal, but that is not testimony.

Q. Are you acquainted with the present Commissioner?—A. Oh, yes, sir; I knew him when he was in charge of distribution, under Professor Baird's administration. I knew him in that capacity and was with him and served under him.

Q. Do you know what his reputation is as a fish-culturist.—A. Excellent, as I understand. I have no doubt he is the best in the country, one of the best at least.

Q. That is his general reputation.—A. Yes, sir.

Q. I will read you the resolution under which this inquiry is proceeding, and then I will ask you to state in your own way anything that you think comes within its scope.

Resolved, That the Committee on Fisheries be, and it is hereby, instructed to make early inquiry into the administration of the affairs of the United States Fish Commissioner's Office, and especially in respect in the changes of the force, compensation paid to employés, and any alleged favoritism or other undue administration, and to report to the Senate thereon.

A. There is only one point that I could touch on. He did show partiality toward the South in appointments. His appointments are mostly from the South. That I can swear to. I know that is a fact. That is a point I am sure of.

Q. You mean appointments by the present Commissioner?—A. Yes, sir; Colonel McDonald. They are largely, or in the majority, from the South.

Q. Do you know as to the efficiency and competency of the appointees for the positions to which they were appointed?—A. They were perfectly competent, some of them the very best, having great experience and running all through the knowledge of fish-culture business ever since 1875, in its infancy and when it was started.

TESTIMONY OF W. E. STEWART.

W. E. STEWART, being duly sworn and examined, testified as follows:

By the Chairman:

Q. What is your name?—A. W. E. Stewart.

Q. Are you in the employ of the Fish Commission?—A. Just to a small extent. I was requested by the colonel to take temperatures of water and to report the daily arrivals of fish at the river front, Eleventh street wharf, right there at the headquarters; that is all. All the shad and herring arrive at one wharf, and I was requested by the colonel to take the temperature daily and report daily the arrivals of fish, so as to keep him posted as to the catch.

Q. Do you know anything about what is done with the fish taken at Fort Washington?—A. I sell the fish. That is my business. I am a fish commission merchant.

Q. Of course, they are taken for the spawn, and then all the fish taken there are sent to the market and sold?—A. Yes, sir.

Q. Do you know where the money goes?—A. They generally send a little manifest, a small piece of paper, a manifest for so many shad and the few herring they catch there, and I sell the fish and return the money by the captain or the party who brings the fish.

Q. To the station?—A. Yes, sir.

Q. Do you know what is done with that money?—A. No, sir; that is beyond me.

Q. Have you been at the Fort Washington Station during the last two years?—A. No, sir; my business requires my presence at the wharf from daylight until dark during the fishing season.

Q. It has been charged that there was a good deal of intemperance down there, that the officer in charge and his assistants made pretty

free use of liquor. Do you know anything about that?—A. No, sir; I do not know anything about that. There must be somebody who was doing the fishing—the fish which they sent to market. Their catch was about as good as you could expect. That came regularly. So whoever was fishing was not indulging to a very great extent, I judge, from the arrivals of fish.

Q. Do you know anything about the appointments which have been made in the Fish Commission by the present Commissioner?—A. Not at all. I do not know anything about it at all.

Q. You do not know anything about the rules and conduct of the station?—A. Nothing whatever.

Q. Do you know Mr. Worth?—A. I know Mr. Worth.

Q. Do you consider him an intemperate man?—A. Not at all. I never saw him under the influence of liquor in my life. I never saw him even taste a drop of liquor in my life, so far as my connection goes. I have known him for the last two or three years, from the fact of his being stationed there at the Fort and sending fish to me to sell. He generally sees me before the season starts in and asks me to make some arrangements and have facilities for bringing the fish to market in as good condition as possible, and asks for a little information about how the catch is, etc. That is about as far as our connection ever went.

Q. We are proceeding under a resolution of the Senate, which I will read you.

Resolved, That the Committee on Fisheries be, and it is hereby, instructed to make early inquiry into the administration of the affairs of the United States Fish Commissioner's Office, and especially in respect of the changes in the force, compensation paid to employés, and any alleged favoritism or other undue administration, and report to the Senate thereon.

Now, that is what we are instructed to inquire into. If you have any knowledge on any of these points, as to changes in the office, dropping out of former employés, employing new ones, as to any favoritism on the part of the Commissioner towards any employés, or anything of that sort, if you will state it to us, we will be obliged to you.—A. I do not know anything about it. I do not know of any favoritism which has been shown; in fact I know nothing about his appointments or removals, or anything of that sort. I am very well acquainted with the colonel. I have been in the fish business all my life, and generally furnish him information.

Q. Among men who understand fish matters and know about such things, what is the reputation of Colonel McDonald as a fish-culturist?—A. First rate. I have never heard him spoken of otherwise. He stands first rate. He seems to know, and to know exactly, what he is doing.

TESTIMONY OF L. E. HARRON, Recalled.

L. E. HARRON, being recalled, testified as follows:

By the CHAIRMAN:

Q. You are connected with the Fish Commission?—A. Yes, sir.

Q. What are your duties?—A. I have been doing various jobs.

Q. Have you been at the Fort Washington Station during the last year?—A. Yes, sir; for the last six seasons.

Q. During the catching season?—A. Yes, sir; during the fishing season.

Q. Do you know, then, Mr. S. G. Worth?—A. Yes, sir.

Q. Do you know whether Mr. Worth is an intemperate man or not?—

A. No, sir; I do not think he is. I think that I can safely say that he is not.

Q. How long has he been there?—A. I was under him three years.

Q. Have you ever seen him intoxicated during these three years?—

A. No, sir; not the slightest.

Q. If Mr. Worth had been an intemperate man during the last three years, you having been on the ground, would you have been apt to have discovered it and known of it?—A. I should think so. I saw him every day.

Q. And you have never seen him under the influence of liquor?—A. No, sir.

Q. It has been testified here that upon one occasion, when they had an unusual run of fish, I reckon herring, and he made two trips—it was a bad, wet day, and he was out pretty late at night—that when he came back he was intoxicated.—A. I only know from hearsay. I was in bed when the launch came down on that occasion, and I did not see any of them at all.

Q. Have you ever known of his remaining at his house from one to three days because he was on a spree?—A. No, sir; I have not. I know of one occasion when he was there sick two or three days.

Q. Do you know he was sick?—A. I was in his room and saw him. He was taking medicine, and he did not look like a drunken man to me.

Q. Generally, were the men employed there in the habit of having liquor and using it?—A. I did not see any of it, but I suppose some of the men if they felt like taking a drink of whisky did so.

Q. If they use it at all, how can they get it?—A. From the steam-boat that makes a landing at the wharf.

Q. There are steam-boats with bars on board which land at the wharf? A. Yes, sir.

Q. And the men, if they wanted to use liquor, could get it on the steam-boats?—A. It was on sale there, but if there was drunkenness or disorder or anything around the place I never saw it.

Q. Your duties were right down at the station?—A. Yes, sir; at the seine.

Q. What were your particular duties?—A. I was in charge of the seine.

Q. You were captain of the seine?—A. Yes, sir.

Q. You were before the committee before. Did I ask you as to the money received for the sale of the fish?—A. The fish are sold and the money used to pay the expense of running the seine.

Q. Do you know whether the money was applied for that purpose?—A. I know that the seine haulers are paid out of it.

Q. Do you know whether the amount received from the sale of the fish for the last two or three years has been sufficient to pay the seine haulers?—A. I think it has, with the exception of this last season. I do not think we made quite enough money out of the fish this last spring, on account of its being a bad season.

Q. Still the men were paid?—A. Yes, sir. I do not think there was much difference. I think that we were nearly about even.

Q. By whom were you employed when you first entered the service of the Commission? Was it during Professor Baird's administration?—A. Yes, sir. Mr. Carswell had charge of the station at the time.

Q. As to the wages paid yourself and the men employed in hauling the seine, are you and they paid more or less than when you first entered the service?—A. Paid the same. The seine haulers get \$1 a day and board themselves out of that. They do not really get enough.

Q. But they are paid the same as they were paid when you first entered the service?—A. Yes, sir.

Q. Has it been increased since Colonel McDonald took charge?

The WITNESS. Since Colonel McDonald has been Commissioner?

The CHAIRMAN. Yes, sir.

A. No, sir; not a dollar.

Q. Is there any person at Fort Washington who is connected with the Fish Commission in any way who keeps liquor for sale to the men?—

A. No, sir. Such a thing, I can safely swear, has never been the case at that place.

Q. Do you know the sergeant in charge of the fort?—A. I am well acquainted with him.

Q. Do you know whether he keeps liquor and sells it to the men there?—A. No, sir; he does not.

Q. I will read you the resolution under which we are proceeding:

Resolved, That the Committee on Fisheries be, and it is hereby, instructed to make early inquiry into the administration of the affairs of the United States Fish Commissioner's office, and especially in respect of the changes in the force, compensation paid to employés, and any alleged favoritism or other undue administration, and report to the Senate thereon.

Now if you have any knowledge on any of those subjects which I have not drawn out by questions I will be glad to have you state it in your own way.—A. So far as the running of the Commission is concerned I think that Colonel McDonald certainly has done the very best he can, as well as anybody can. I have been in the Commission a good long time.

Q. Are the affairs conducted in a business-like way?—A. Yes, sir; all the way through, and he seems to devote his whole time and attention to the work.

Q. Do you know of any favoritism or of Commissioner McDonald having any pets who have soft places?—A. No, sir; I do not. He seems to try to have the men under him take an interest in the work and attend to the work, and as to whisky drinking and disorder and one thing and another, I know that he has always been bitterly opposed to it.

Q. And there is nothing of it at Fort Washington?—A. No, sir; I know that he gave me orders that if the colored seine-haulers got drunk to discharge them right away, which I never had to do. I never had any trouble with them at all.

Q. Do you know Mr. Harris, who was employed there for a short time—I think during one fishing season?—A. Yes, sir; I think he was there last season a year ago.

Q. What position did he fill?—A. I think he worked in the hatching house.

Q. Do you know as to his habits, whether he was a temperance man, or otherwise?—A. No, sir; I do not.

Q. He testified yesterday that he was wet more or less and that he bought whisky from the steamers there from time to time and took a little drink of whisky now and then himself.—A. Probably he did.

Q. But you never noticed any effect from it?—A. No, sir.

Q. He testified that on one occasion Mr. Worth was intoxicated and remained at his house for two or three days. What do you say on that point?—A. I saw Mr. Worth every day and never saw him under the influence of liquor. On the occasion of which you have spoken I was in there and saw him on business and found him upstairs in bed taking medicine. Bottles of medicine stood on the mantel-piece.

Q. Do you know of Harris going to the house to see him during that time?—A. No, sir. Probably he did, but not to my knowledge.

Q. Do you know why Mr. Harris left the employment of the Commission?—A. I suppose because they did not have work for him.

Q. He was retained through the fishing season?—A. Yes, sir; and at the end of the season he was put off, which is done every season with employés who are taken on for the season's work. They are put off as soon as it is over, because there is nothing more for them to do. I could tell you something about the seine, if you wish to know anything about it.

The CHAIRMAN. You can do so.

The WITNESS. In the last three years this seine has gotten about 50,000,000 of spawn, which have cost the Government about \$22 or \$23 a million. Other spawn gotten from the river, from the gillers, have cost the Government about \$80 or \$85 a million. There is the difference between the seine that we run at Fort Washington and the cost of the eggs gotten from the balance of the fishermen.

Q. So that you think that the operating of the seine at Fort Washington is a good business operation in connection with the Commission?—A. Yes, sir, undoubtedly. It almost sustains itself. Of course we have got to have a little tackle and have got to get a seine in the first place, which lasts about five years and probably costs between four and five hundred dollars, and with that seine you could catch seventy-five or eighty-five millions of spawn or more.

Q. The operating is paid for by the fish taken?—A. Yes, sir. The cost of twenty-two or twenty-three dollars a million includes the outfit; the seine, tackle, and all that.

Q. It includes the entire cost?—A. Yes, sir; my wages, and so on.

TESTIMONY OF MERWIN M. SNELL.

MERWIN M. SNELL, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What is your full name?—A. Merwin M. Snell.

Q. Where do you reside?—A. In Washington.

Q. Are you connected with the United States Fish Commission?—A. I am not at the present time.

Q. Have you been in the past?—A. I was connected with the Fish Commission from January 3, 1881, until about the middle of February of the present year—about ten years.

Q. You were appointed by Professor Baird?—A. Yes, sir; under his administration.

Q. What position did you occupy there?—A. I was at first secretary to Mr. R. Edward Earle, who was in charge of the statistical work, a certain branch of the statistical work, and after I became more familiar with the work I was one of the fisheries experts, as they call them, who go out into the field and investigate personally the fisheries of the different places on the coast, and write up reports on the fisheries.

Q. What was your compensation when you entered the service?—A. It was, if I am not mistaken, \$30. If I am not mistaken, I went in under Mr. Earle at \$30.

Q. Was it increased?—A. In about two months to \$50. I worked at \$50, although Mr. Earle and the other superior officers assured me that it ought to be a hundred and that they hoped soon to increase it, until,

I think something like two years ago, when it was increased to \$60, and then to \$75.

Q. Was this last increase to \$75 after Commissioner McDonald came in charge?—A. It was. I applied for the increase, as I had been promised years before a greater one than that, and I asked at this particular time for this particular increase, saying that I had been promised an increase a great many times.

Q. Was that increase made upon the ground that your duties were increased?—A. No, simply that they could afford it.

Q. Because you became valuable?—A. No, sir. They had recognized after the first three or four years, in fact they recognized all the time, and they kept telling me, that they knew I ought to have more, but they did not have money enough; that they could not spare the money to give higher salaries. All the clerks in the division of statistical inquiry are and have been getting since I have known anything about them not half, hardly, what they get in other departments of the Government for inferior classes of work.

Q. You do not consider this increase in your compensation which was made by Colonel McDonald as too large?—A. No, sir; I consider it was not. There was no change in my duties at that time. I had been doing exactly the same thing that I had been doing for years back. I had been told years before that I ought to have a hundred dollars a month.

Q. So that you did not consider your increase as excessive?—A. Not at all.

Q. It was not due to any special favoritism on the part of the commissioner?—A. No, sir; not by any means.

Q. It has been charged that he has his pets.—A. I was certainly not one of his pets. I never saw any evidence of that.

Q. Why did you leave the employment of the Commission?—A. Because I received another appointment, which was far better and more satisfactory.

Q. Did you ever have any personal difficulty or misunderstanding with the present Commissioner?—A. Well, I considered that in various respects I had not been well treated, and we had some little correspondence which had some feeling in it. I had some feeling of hostility to the authorities of the Commission, not personally, but in their official capacity, on account of official relations between them and myself. I did not consider that I had been treated justly and I wrote him to that effect.

Q. Do you know of any relatives of Commissioner McDonald or family connections who have been appointed by him to office?—A. No, sir; I do not.

Q. It has been stated, as I said before, that the Commissioner has his favorites and pets there, whom he favors at the expense of others, who are equally competent?—A. I have no reason to suppose that it is so.

Q. While you were there, what was the custom as to the regularity of attendance of employés, did they come in at the regular hour and remain until the proper hour of closing?—A. I think that there was a great deal of difference in the offices. In the office I was in there was a great deal of difference for different periods of work. As a rule, the understanding in the Commission was that people should take a personal interest in the work, that they were not compelled to be present at any particular hour in the morning, at least that was the case in my division, and neither were they supposed to hurry off at a particular

hour in the afternoon for closing. When I first went into the Commission, I suppose usually, on the average, I did not get there until something like half-past nine. The first few years I was in the Commission I was expected really to do several hours' work after time, and frequently worked in the evening and oftentimes outside of the regular hours during the day. That was the case with me. My superior worked even a greater number of hours than I did. That was generally the case in those days.

Q. In that Department?—A. Yes, sir; every one in the office worked more than eight hours, I think, although they were not required to be there at exactly 9 in the morning.

Q. But they put in full time?—A. They put in more time. During the last part of the time I was there it was not the case that they put in more hours, but it was not particular that they should come there just at 9.

Q. Have you any knowledge of any appointments being made by Commissioner McDonald upon political grounds?—A. I know of only one.

Q. Who was that?—A. A certain Mr. Martin, the only appointee I ever knew of in the Commission who did not seem to be kept on the ground of capacity or fitness for the work.

Q. What position did he occupy?—A. He was a clerk in the division of fisheries when I first came in contact with him. Prior to that time he was in some other branch of the Commission work.

Q. Do you know what State he was from?—A. I do not. He was there through the influence of Attorney-General Garland. I do not know where he was from.

Q. He was appointed by Colonel McDonald?—A. Yes, sir. I think the time I first knew him it was in the Colonel's administration. He was addicted to drunkenness and used to be away a great deal on that account. He was generally considered to be incompetent in several respects.

Q. Was he in the service of the Commission when you left?—A. He had been receiving when he was in that position \$60 a month. I was receiving then \$60 a month, too. There were two or three clerks in the office who were familiar with the work and who were experienced in the work, and who were twice as experienced as he was who got only \$50.

Q. Why did he leave the Commission?—A. He left on account of incapacity.

Q. Was he discharged?—A. Yes, sir; by Colonel McDonald, but on the recommendation or request of the chief of the division. But at the time he was given a month's extra pay ahead, although that has not been done in a great many other cases of persons who were men who had a good record in the service. That is the only instance that I know of. That is the only instance that I have any knowledge of.

Q. What can you say—you were in the Commission before Colonel McDonald came in?—A. Long before.

Q. And you were there for a year and a half or so afterwards. Now, what can you say as to the general administration of the office, the methods and system of business under Colonel McDonald, as compared with the former period?—A. Well, I do not know that I can say anything very definite about that. I have nothing more than a general impression.

Q. Was there any marked change in the manner of administration?—A. Yes, sir; and in this particular, that Colonel McDonald is a specialist

in propagation and that branch of the work, and consequently that branch of the work received greater attention after he came in, which is perfectly natural under the circumstances. Professor Baird was more of a scientific man and he was more inclined to divide attention between the three branches of work. I do not know that I would be willing to swear that that is actually the case. That is my impression, that the work of propagation received greater attention after Colonel McDonald came in.

Q. After Colonel McDonald came in was there a competent person in charge of the division of statistical inquiry?—A. I think the same gentleman remained, Mr. Rathbun, who is perfectly competent.

Q. He conducted his branch of inquiry with considerable independence, I suppose?—A. Yes, sir; that is the case, and so with the division of fisheries, in which I was. Professor Baird gave much attention to details, but since the colonel has been in this division of fisheries has not been in a very definite and satisfactory condition, because it was placed under Captain Collins, who already is in charge of another branch of the work, and who is not specially familiar with this branch of the work, in fact not at all, but here was under him a sort of chief clerk who was familiar with the work, and he conducted the work, although he was not the chief theoretically.

Q. Do you think that owing to the fact that Colonel McDonald gave attention to practical propagation of fish the scientific branches of the inquiry suffered?—A. I doubt if they did. I do not think they did.

Q. They went along in their proper channel, and he just gave more personal attention to his branch?—A. Yes, sir. I think the authority for that branch is in him, and he has enlarged the scope of that work without decreasing the scope of the other work. I do not think that there was impaired efficiency in the other branches of the work.

Q. From along about the time of Professor Baird's death up to now, has the work of the Commission increased within your knowledge; have there been additional hatcheries established, and has the work been extended and expanded?—A. Yes, sir; considerably.

Q. That would lead necessarily to an increase in the total force?—A. Yes, sir; certainly.

Q. Do you know of any undue increase in the force—that is, were persons appointed simply because the Commissioner desired to appoint them when they were not really essential to the progress of the work of the Commission?—A. I have no knowledge of any such case, and I am very certain, from what I know of the Commissioner, that he has a personal interest in the work which would not allow him to sacrifice efficiency for any ground. I really know very little regarding the personnel of propagation, and the additions which would come by this extension of the work would come mostly outside of Washington at other places where hatcheries were, and would not be under my observation, although I hear sometimes from one of the hatcheries and know if people come from the hatcheries, and I never heard of any such case.

Q. Did you ever have occasion to visit any of the hatcheries?—A. Yes, sir.

Q. Which ones?—A. I have visited Northville, Mich.; I have visited Wood's Holl. I do not know that you call that a hatchery; it is a station.

Q. Have you ever visited Battery Island?—A. I have visited that. There are no more that occur to me now.

Q. You never were at the Leadville hatchery?—A. No, sir; that is a new one.

Q. And the Put-in Bay Station, on Lake Erie?—A. No, sir.

Q. Are you acquainted with Mr. Blaisdell?—A. I think I knew him to speak to, but I would not know him by sight now. I do not know which one it is. I knew him very slightly.

Q. He was there awhile and left. Do you know anything about his competency?—A. I know nothing about it.

Q. I will read you the resolution under which this inquiry is proceeding:

Resolved, That the Committee on Fisheries be, and it is hereby, instructed to make early inquiry into the administration of the affairs of the United States Fish Commissioner's Office, and especially in respect to the changes in the force, compensation paid to employes, and any alleged favoritism or other undue administration, and to report to the Senate thereon.

That is the resolution of inquiry under which we are proceeding. If you know anything in regard to any of the points involved in the resolution which I have not drawn out by questions, please state it in your own way what it is. We want to find out, generally, whether the affairs of the Commission are well and properly conducted or not. If you know anything touching those points, please give it to us in your own way.—A. I have already seen in the papers the wording of the resolution; I have seen nothing to justify any of those charges. The arrangement of the salaries has always been very unjust, but not on account of any favoritism. It has been purely on account of a desire to economize, and they would always get every man for as little as they could. If they could get a good man for a high class of work cheaply they would get him as cheaply as possible, and they would not pay him a cent more than they had to. Sometimes men doing a high class of work would be paid less than they ought to be.

Q. Do you think that has occurred to any greater extent under Colonel McDonald than in former years?—A. Not at all. There was a tendency to remedy the state of affairs; there was a tendency to equalize things. There has been a great deal of talk about it, and it was announced as Colonel McDonald's intention, as soon as he was able, as the appropriation permitted him, to form a schedule and reorganize it and make the salaries perfectly fair.

Q. Within economical limits?—A. Yes, sir; but the idea was to graduate them, so that people doing a higher class of work would get a higher salary. There were some moves made in the direction of equalization. It was in connection with that that an increase in my salary was made. The salaries of several people, whom they had recognized as capable and who ought to be getting twice as much as they were, were increased at the same time.

Q. Do you think that that is a wise policy?—A. Yes, sir. There was always a great deal of discontent. The tendency was to retrench everywhere. That was the idea. But my opinion on the general subject, which I have frequently expressed, is that I do not know of any department of the Government, so far as my knowledge of it goes, where everything has been conducted on a more strictly business principle than there. It has been the rule, to which there has been no exception, except that one case that I know of, that no one has been appointed except because it was thought he could do the work, and whenever a man has been put out it has only been because he could not do the work. The removals were only on business principles.

Q. It has never been run as a political machine?—A. Never. There was nothing of the sort at all under Professor Baird, and since the colonel came in there has been but one instance which I have heard of. I have heard rumors of others, but have not heard anything to justify them.

TESTIMONY OF R. E. LEWIS, Recalled.

R. E. LEWIS, being recalled, testified as follows :

By the CHAIRMAN :

Q. Were you stationed at the Fort Washington Station ?—A. Yes, sir ; last spring.

Q. During the last fishing season ?—A. Yes, sir.

Q. I want to ask you some questions as to your knowledge of the use of intoxicating drinks by the employés at that station.—A. Well, sir, aside from when the Mt. Vernon boat stops there to get off the mail—it generally comes down, well, about a quarter after 11, and then goes back at half-past 2 in the evening—I have seen men go to the boat and get a bottle of beer ; just buy it from the bar room——

Q. Have you ever seen them get any whisky ?—A. Yes, sir ; not this year.

Q. Have you ever seen any employés there under the influence of liquor, so as to interfere with the performance of their duties ?—A. Never in my life. I never saw any of the employés on the reservation under the influence of liquor.

Q. I want to ask you particularly about Mr. Worth. Did you ever know of Mr. Worth being intoxicated while on duty there ?—A. Never, sir.

Q. Did you ever know of his being on a prolonged spree for two or three days at his house, so that he did not come down to the station at all ?—A. I never heard of it at all.

Q. During this last season do you remember that Mr. Worth was sick at his house and was away from the station for two or three days ?

The WITNESS. At his house ?

The CHAIRMAN. That he was sick at his house. Do you know of his being sick and confined to his house there for two or three days ?

A. No, sir ; I have seen him every day.

Q. Did anybody connected with the work of the Commission there ever keep any liquor or beer for sale to the men ?—A. No, sir.

Q. All the liquor, beer, or other beverages which they procured they got themselves by going onto this Mt. Vernon boat as it stopped at the dock ?—A. Yes, sir ; or, probably, a man would get permission to come up to Washington on business, or something of that sort. They might, if they had any whisky, have got it there. There is no place where they can buy it around the fort.

Q. You have never seen the men who are at work there on the seine or connected with other parts of the business incapacitated for doing their duty in consequence of drinking ?—A. Never, sir. I omitted when before the committee the other day to give you all of my past history in connection with the Fish Commission. Besides what I told you, I was a messenger on the *Corcoran*, shipping eggs from Fort Washington up here. That was season before this last season, the season of 1889. During that period I took my meals at Mr. Worth's house almost every day. I do not remember a single exception—that is week days.

Q. At noon ?—A. Yes, sir ; I took my dinner there.

Q. Was it Mr. Worth's habit to take a drink at noon ?—A. I never saw him take a drink at that time, or at any other time.

Q. Do you know Mr. Harris, who was employed for one season down at that hatchery ?—A. There are two Mr. Harrises.

Q. Z. V. Harris?—A. Yes, sir; I know him.

Q. He was employed during one fishing season?—A. He was there the season that I was on the *Corcoran* shipping eggs from Fort Washington to Washington.

Q. Do you know anything about his habits?—A. I know nothing; all I know of him is from just seeing him every day at his work. He seemed to be attending to his work; he was assistant in the hatchery there; he used to help me every day to put up the eggs.

Q. Do you know why he was dropped from the rolls?—A. No, sir; I do not, any further than that the men who are taken on at Fort Washington are simply temporary employés.

Q. When the season was over he and the others were dropped?—A. It is understood that their services are no longer required. That is all I know.

Q. During the term of your service at Fort Washington and the year that you were on the *Corcoran*, did you ever see Mr. Worth—you saw him every day?—A. I think every day, sir.

Q. Without exception you think?—A. I do not remember of a single exception.

Q. During the term of your service at Fort Washington and the year you were on the *Corcoran*, did you ever see Mr. Worth under the influence of liquor?—A. Never.

Q. If he had been confined to his house two or three days in succession, would you have been apt to have noticed his absence?—A. I would have known it. Now the spring I was on the *Corcoran* he was sick, but I saw him every day.

Q. At his house?—A. I took dinner at his house.

Q. During the time he was sick?—A. Yes, sir; with his family.

Q. Have you any reason to believe that that sickness was really caused by excessive drinking instead of his being sick?—A. No, sir. When I say that I think I saw him every day, that is as far as I can remember. He might have been confined to his bed a day or two, probably he was, but I just paid no attention to it. I know he had a severe cold. That is as far as I could see was the cause of his sickness.

Q. You were on the *Corcoran* the season of 1889?—A. The summer of 1889.

Q. Was it during the summer of 1889 that he was sick for two or three days?—A. Yes, sir.

Q. You were at his house every day?—A. Yes, sir.

Q. And you had no reason to believe that he was on a spree instead of being sick?—A. No, sir; I never heard any allusion of that sort to him from any employé around the station.

TESTIMONY OF DANIEL MOORE.

DANIEL MOORE, being duly sworn and examined, testified as follows

By the CHAIRMAN:

Q. Where do you live?—A. I live at Virginia Avenue, 229½, Washington, D. C.

Q. When were you first employed by the Fish Commission?—A. Last summer regularly, the 10th of July.

Q. What work had you to do?—A. I had laboring work to do around the building.

Q. Around the Central Station?—A. Yes, sir. I cleaned up around there.

Q. What pay did you receive?—A. Thirty-five dollars.

Q. Were you at the Fort Washington Station during the shad season of 1888 and 1889 and 1890?—A. Yes, sir.

Q. Do you remember whether the launch *Blue Wing* was employed at Fort Washington in the work in 1888, 1889 and 1890?—A. Yes, sir.

Q. Did not launch No. 61 do the same work in 1889 and 1890 that the *Blue Wing* did in 1888?—A. Yes, sir.

Q. Did Mr. McDonald and his friends come to the station in 1889 and 1890 and have shad bakes, planked shad; that is, this summer a year ago?—A. Yes, sir.

Q. Did you ever see Mr. Gill and Mr. J. J. O'Conner and a party of gentlemen visit the station and have shad bakes?

The WITNESS. Did I ever see them have shad bakes?

The CHAIRMAN. Did Mr. Gill and Mr. O'Conner?

A. No, sir.

Q. Whom did you see there at a shad bake?—A. No one but the colonel, sir.

Q. When was that?—A. The colonel was down this summer, or the spring at least.

Q. Several times?—A. He was down there, yes, sir, several times.

Q. And each time had some friends with him, and they had planked shad, did they.—A. Yes, sir.

Q. Did you not get the shad for those occasions from Mr. Harron, who had charge of the fish seine?

The WITNESS. Did I?

The CHAIRMAN. Yes.

A. No, sir; I did not get the shad.

Q. Do you know whether the shad that were used were caught by the seine there?—A. I do not know, sir.

Q. Did you ever see anything to drink; that is, any whisky or wine, or anything on those occasions?—A. No, sir.

Q. Did the colonel have wine there when he had his friends down there.—A. No, sir; the strongest thing around there was lemonade.

Q. Coffee, perhaps?—A. Yes, sir.

Q. Did you ever purchase any whisky for Mr. Worth from the steamer *Corcoran*?—A. No, sir; I never did.

Q. Did you ever see Mr. Worth intoxicated at Fort Washington?—A. No, sir.

Q. Did you overhear the men talking about his drinking?—A. No, sir; I never heard them talk about it.

Q. Do you know Mr. Worth?—A. Yes, sir; I have known him for years.

Q. You never saw him drunk?—A. No, sir.

Q. Who employed you at Fort Washington?—A. Mr. Carswell.

Q. He was in charge before Mr. Worth was?—A. Yes, sir.

Q. When were you employed down there at Fort Washington?—A. I was first employed in 1885.

Q. Did Mr. Worth promise you the position you now hold? Did he promise you that you should have a position at the Central Station?—

A. Yes, sir.

Q. If so, how long before you received word to go to work there?—A. He promised me in April.

Q. When you were at work at Fort Washington?—A. Yes, sir. I

went to work on the 10th of July. I received a letter on the 9th to report at once.

Q. That you were to go to work at the Central station?—A. Yes, sir; and I came right up.

Q. What time of night did the launch usually return from down the river with shad-eggs?—A. Sometimes 11 o'clock and then again at 1 o'clock in the night, and as late as 2 o'clock.

Q. Do you remember if the launch was often used to tow the boat, the run boat, the boat that carried the fish to market, and what time would the launch generally get back from Washington? Did they use the launch to tow the boat with fish up to Washington?—A. That I do not remember.

Q. You do not know about that?—A. No, sir.

Q. Do you know what time the launch generally got back from Washington when she generally came up with fish?

The WITNESS. Do you mean at night?

The CHAIRMAN. Yes.

A. No, sir; I do not.

Q. Did you ever hear Mr. Lynch and others complain about their work when they worked night and day?

The WITNESS. Mr. Lynch?

The CHAIRMAN. Yes.

A. Yes, sir; I have heard him; he is the only man; I never heard anybody else.

Q. He complained that he had to work too much at night?—A. Yes, sir.

Q. Did Mr. Worth offer to sell you any pictures or photographs?

The WITNESS. Me?

The CHAIRMAN. Yes.

A. No, sir.

Q. Did you ever hear of Mr. Worth receiving money for shad bakes at Fort Washington?—A. No, sir.

Q. Was not the launch *Blue Wing* kept in Washington by Colonel McDonald as a pleasure boat in the years 1889 and 1890?—A. I do not know, sir.

Q. The *Blue Wing* is the little steam-launch?—A. Yes, sir.

Q. What did they use her for generally?—A. To go down the river and get the eggs.

Q. The gillers and the seine men?—A. Yes, sir.

Q. Did you ever see Mr. McDonald and his friends using her for pleasure purposes?—A. No, sir. When they came there they came on the *Corcoran*.

Q. When they came there they came on the *Corcoran*?—A. Yes, sir. It was the mail-boat.

Q. Was it your business to build Mr. Worth's fires and to wait upon him whenever requested to do so and to stop any work you might be doing for the Fish Commission. That is, were you taken off from your regular work to build Mr. Worth's fires and to wait upon him?—A. No, sir; not from my regular work.

Q. Did you wait upon Mr. Worth more or less at his house?—A. No, sir; I waited upon the mess.

Q. That was what you were doing there?—A. That was my work.

Q. You were not called upon by Mr. Worth to wait upon him especially?—A. No, sir.

Q. Did you ever hear the men complain about the way the mess was run by Mr. Worth?—A. Well, no, sir.

Q. What are your wages at the present time?—A. Thirty-five dollars a month.

Q. What were your wages at Fort Washington in connection with the mess there?

The WITNESS. This summer?

The CHAIRMAN. Yes.

A. Thirty-five dollars; the same price.

Q. What were you doing at Fort Washington after the season closed this year?—A. I did not stay there at all.

Q. You left when the fishing season was over?—A. Yes, sir.

Q. Did you help clean up Superintendent Worth's house after he left last year, in 1889?—A. Yes, sir.

Q. Did he pay you for doing it?—A. Yes, sir.

Q. Were there any whisky bottles and demijohns sitting around there?—A. No, sir.

Q. Do you know whether John Smith brought them to Washington to sell?—A. I do not, sir.

Q. Do you know John Smith?—A. Yes, sir; I board at his house.

Q. If he had brought a lot of whisky bottles and demijohns from Mr. Worth's house last year up here to sell would you be apt to know of it?—A. Certainly.

Q. You think you would?—A. Yes, sir.

Q. You do not know of any such thing?—A. No, sir.

Q. Did you ever hear the seine haulers complain that they were charged for fish?—A. No, sir; I never heard it at all.

Q. Did the seine haulers, as a matter of fact, get fish there?—A. They got fish; yes, sir.

Q. Do you know whether when they got fish they were charged to them or not?—A. I do not.

Q. You did not have anything to do with that?—A. No, sir.

Q. You were connected with the mess there?—Yes, sir.

Q. Did you ever know of Mr. Worth being at home two or three days at a time on a spree, claiming that he was sick?—A. No, sir.

Q. Do you consider Mr. Worth a drinking man?

The WITNESS. Do I?

The CHAIRMAN. Yes.

A. No, sir.

Q. If he was in the habit of drinking much would you have been apt to have seen it?—A. I certainly would, sir.

Q. Do you know anything as to who paid the expenses of the shad dinners that were given there by Colonel McDonald to his friends?—A. No, sir.

Q. When the colonel came down there, with any friends did he bring servants from his house, his cook, etc., down there to cook the shad?—A. He did, sir.

Q. Did his wife and daughter sometimes come down to help about it?—A. Yes, sir.

Q. You never saw any wine or whisky used on such occasions?—A. No, sir.

Q. Do you know anything at all about these dinners, beyond the fact that he had men there?

The WITNESS. Dinners?

The CHAIRMAN. Yes; when he brought friends down there to have planked shad. You simply know that he did sometimes have his friends there to have planked shad; but do you know who furnished the dinners? What else beside the shad was furnished from the mess, or did he bring it down there?

A. No, sir; it was not furnished from the mess, because his own box used to come down on the boat; he used to bring his own stuff down.

Q. And he never used anything from the mess?—A. No, sir.

Q. Can you give any idea as to how many times Colonel McDonald or any of the Fish Commission gave those planked shad dinners there?—

A. No, sir; that I can not tell.

Q. Many or few times?—A. Only a few times.

Q. How many would you say would cover it, eight or ten times?—A. Oh, no, sir; not near.

Q. Not so many?—A. No, sir.

Q. Four or five times?—A. Not as many as that.

Q. Two or three times?

The WITNESS. Do you mean during the fishing season?

The CHAIRMAN. Yes; when he would come down there with friends and have planked shad.

A. About two or three times.

Q. Did Mr. Worth ever give any shad bakes at Fort Washington?—

A. Not that I know of.

Q. Would you have been apt to have known it if he had?—A. I would.

Q. So that you think he could not have done it?—A. Not without my knowing it. He did not do it in my time.

Q. You were there two years?—A. Three years this last year gone.

Q. You never knew Mr. Worth to invite any friends there and give a planked shad dinner?—A. No, sir.

TESTIMONY OF WILLIAM T. COX.

WILLIAM T. COX, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What is your name?—A. William T. Cox.

Q. Are you employed by the Fish Commission?—A. No, sir. I furnish them groceries and provisions for their mess.

Q. For the cars?—A. Yes, sir; for Fort Washington, and for the cars, too.

Q. Who makes those purchases?—A. Mr. Worth. I was speaking to the gentleman here (referring to Mr. Olds) about another gentleman.

Q. Did Mr. Worth make the purchases for the Fort Washington Station?—A. Yes, sir; and for the cars, too. Then the captains of the cars used to deal, too. There are three distinct books—three or four books at one time. For each car there is a book. There are three, I think, and then one for the mess.

Q. For the Fort Washington mess?—A. Yes, sir; and then Mr. Worth's family. Of course that is separate.

Q. During what period did you furnish the mess at the Fort Washington Station?—A. I furnished that station for about eight or ten months.

Q. This last summer?—A. No, sir; the summer previous.

Q. Eighteen hundred and eighty-nine?—A. Yes, sir; and then previous to that I furnished both the mess and the family for about two years. Then I had a partner, and the firm was Bean & Cox. But I individually have only served them for about eight or ten months.

Q. Your arrangement was made with whom?—A. Mr. Worth.

Q. Was there any side arrangement between you and Mr. Worth by which he was to derive any benefit from your furnishing these supplies?—A. No, sir. It was through Mr. Bean that I got Mr. Worth's trade. Mr. Bean was formerly employed by Mr. Cornwall, and Mr. Bean left Mr. Cornwall and he and I connected ourselves in business, and we catered for it and got it through the influence of Mr. Bean. So he dealt with us.

Q. I asked you whether, when this trade was given to you, any understanding was made between you and Mr. Worth by which he derived any benefit?—A. No, sir.

Q. He simply gave you the preference in the trade?—A. Yes, sir.

Q. Did you furnish the station at regular rates?—A. At cut rates.

Q. It is not your habit to charge them any more than any other people?—A. No, sir. I being convenient to the wharf, it was for that reason I got the preference, and for the low price. We were convenient to the steamer *Corcoran*.

Q. Do you know Mr. Worth personally?—A. Yes, sir.

Q. Do you know anything about his habits, whether he is temperate or not?—A. A temperate man.

Q. Do you keep liquors in your stock?—A. Well, we did when it was Bean & Cox.

Q. Do you furnish supplies to the cars?—A. The families and the mess and the cars.

Q. Have you ever furnished Mr. Worth with liquors?—A. I am not positive about that. I am not sure. Oh, I remember Catawba wine being sent, but I do not think he got anything strong.

Q. You do not know of furnishing him with whisky or brandy?—A. No, sir. He always was a temperate man. When he wrote for this Catawba he said for cooking.

Q. That is the cheaper grade, is it not?—A. Yes, sir.

Q. Did you ever see Mr. Worth under the influence of liquor?—A. No, sir.

Q. Have you seen him frequently during the last two years?—A. I have not seen him for a year.

Q. Do you know anything about the management of the Central Station here, as to the general conduct of the business there?—A. Well, I have a little conception, not much.

Q. You say you furnished the cars with supplies?—A. Yes, sir.

Q. Who made the requisitions?—A. The captains of the cars.

Q. Do you understand that these supplies are paid for by the Commission, or do they have a mess and pro rate the expense between the members of the mess on the car?—A. Now, about the cars, I have always understood that the captains would render an account; that is, they would receive a check. I have understood that the mess would share so much.

Q. They defrayed the expense between them?—A. Yes, sir; between them. All this escaped my memory, and for a moment I can not think.

Q. How often are your bills paid for the supplies furnished to the cars?—A. If the car stayed here, say thirty days, then they would be paid at the end. Sometimes they put in for two or three days only and pay before leaving. There is one car which went to Wood's Holl. They owed me a bill for, say, two months, not more.

Q. Was that paid subsequently?—A. Yes, sir; paid finally by writing for it once or twice.

Q. And among other things Mr. Worth sent for was Catawba wine, which he said was for cooking purposes, did he?—A. Yes, sir.

Q. Mr. Worth did not, by any arrangement with you, receive any discount or commission so that it resulted to his benefit?—A. No, sir. He always looked to the interest of the Commission. “Is that the best you can do,” he would say. “We will have to look around. We will have to buy with those who sell us at the lowest prices.” So he seemed to be in the interest of the Commission. To show you how careful he was about any bribing, he would even refuse a cigar at the end of the month when he paid his bill. He said, “O no, that is all right.”

At 12.30 o'clock p. m. the subcommittee took a recess until 3 o'clock p. m.

At the expiration of the recess the subcommittee resumed its session.

TESTIMONY OF ROBERT F. JOYCE.

ROBERT F. JOYCE, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What is your name?—A. Robert F. Joyce.

Q. Where is your residence?—A. At Fort Washington.

Q. Are you connected with the Army?—A. Yes, sir.

Q. What is your position in the Army?—A. Ordnance-sergeant, U. S. Army.

Q. The Fish Commission have a station during the shad-catching season at Fort Washington?—A. They have for about two months.

Q. Who has been in charge there during the last two years?—A. Mr. Worth. I do not know his initials.

Q. He was there last year, too?—A. Yes, sir.

Q. You have occasion to see him often?—A. Every day in his office and in his dwelling. His family and mine are rather intimate. He has his quarters down there.

Q. What do you say as to Mr. Worth's habits, is he an intemperate man?—A. I never saw him drink a glass of whisky in my life.

Q. You never saw him intoxicated?—A. No sir.

Q. You have seen him every day?—A. I am intimately acquainted with him.

Q. He lives right near you?—A. I live right near him. He is in my house and I am in his.

Q. And you have never seen him intoxicated?—A. Never.

Q. You never knew of his being at his house for two or three days on a spree?—A. If he did, I would know it.

Q. You were there and are sure you would have known if such a thing had occurred?—A. Yes, sir.

Q. What is your observation as to the use of liquors among the employés, the seine men, and those who take care of the eggs, etc. Do they use liquors to any extent?—A. For the line of work they do, they are the soberest men I ever saw.

Q. To your knowledge does anybody connected with the Fish Commission keep any liquor of any kind on sale to the employés?—A. It is part of my duty to see that it is not allowed on the reservation.

Q. That is it?—A. That is so. That is my instruction.

Q. And the thing is not done?—A. No, sir; it is not, by any means.

Q. Do the seine men and others employed there go on the river boats as they touch there and get a drink?—A. I have often see them do that. The boat does not stay there but five minutes. I have often

seen them go aboard and get a drink, but whether they got a glass of beer or whisky I do not know.

Q. You have never seen any drunkenness?—A. I have seen one last year, and he was discharged.

Q. What is his name?—A. Mr. Blades. He was drinking towards the end of the season; he had been there two or three seasons; I asked for him this season, and it was said that they did not want him.

Q. Was he a seine hauler?—A. He was a seine mender; I do not know that he was discharged for that; that is my impression; I have not seen him since; I do not know anything about that.

Q. Do you know of Commissioner McDonald having taken parties of friends down there and giving them planked shad and dinners?—A. I know that he has often been there. About the planked shad, I never saw but one planked shad that I was positive that it was planked shad. Lieutenant Babcock, of the Fish Commission, gave that. The greater part of the guests of the party were of the Metropolitan Club here in Washington.

Q. When was that?—A. Five years ago—four or five years ago.

Q. Have you ever known Commissioner McDonald to take parties down there and entertain them down there?—A. I know that he has often been there, and that they have had lunch or something at the headquarters. I know one case where some of the members of the Committee on Fish and Fisheries being there with him. I was introduced to one of them.

Q. This summer?—A. Yes, sir. This is about the extent of anything I have ever seen there of that kind.

Q. Do you know upon that occasion whether the repast and whatever the refreshments were, were sent down from here by Colonel McDonald, and whether he sent his cook down?—A. I do not know anything about that.

Q. You do not know whether the entertainment was furnished from the mess?—A. I am just as ignorant of that as anybody. That was something outside of my business. I know that they were there a little while and went away again.

Q. Did you ever know a young man employed there within a year or two by the name of Harris? I think he helped to take care of the eggs when they were taken.—A. Oh, yes.

Q. A black-eyed and black-haired fellow?—A. I know him well.

Q. He was there one season, I think?—A. Yes, sir; the year before this.

Q. Do you know anything about the habits of Harris, whether he was a drinking man or not?—A. As I said before, the Fish Commission men I think drink less than any working men I ever saw. I have been in the Army all my life and among working men all my life. I do not know that he was much of a drinker.

Q. He testified that last summer when he was there during the fishing season, that Mr. Worth, who was in charge there, upon one occasion was at his house on a regular spree for two or three days, and did not come out of his house at all; that he was drunk.—A. If that is so I know nothing about it, and I believe I saw Mr. Worth every day since he has been there, unless it was during the five days I was at the Centennial in New York.

Q. When this man Harris was there, did you know of Mr. Worth being intoxicated?—A. I never heard or saw of Mr. Worth's drinking.

Q. If he had been on a regular debauch at his house for three days

would or would you not have been apt to have known of it?—A. I should.

Q. You do not think such a thing occurred, and it could not have occurred without your knowing it?—A. No, sir.

Q. Do you believe it did occur?—A. I do not.

Q. Do you know what they do with the fish taken there after taking the spawn?—A. They send them to Washington.

Q. Do you happen to know what is done with that money?—A. I do not, only from hearsay. I heard that they paid the seine haulers out of it.

Q. It has been stated that the money was made a fund, a sort of entertainment fund, and was spent in entertaining visitors there, and for wines, etc.—A. If they put up the Fish Commission as an entertainment company, it is the worst entertainment company I ever saw. They are the poorest beggars in the Government. They can not repair the house down there, or anything else. They are always talking about no money. I never saw them spend any money. I come in contact with different departments of the Government, but they are the poorest I have ever seen.

Right here I should like to say a word. I read some of the articles in the New York papers. Now, about Senator Gorman being down there. I want to see Senator Gorman. I played ball with him a number of years ago. I say it is a positive lie that he has ever been there in seven years, that I ever heard or knew of. I would have gone all over the ground to have found him if he was there. I sent my card in a while ago, and they said he was not in the Senate Chamber.

Q. Your observation is that the Commission does not entertain very lavishly down there?—A. No, sir. There might be some fish or something of that sort down there. That is all I ever saw.

There was one thing about Mrs. McDonald's coming down on the boat. I know of Mrs. McDonald's coming down on the *Corcoran* before or after the Commission boat, very often after. It looked to me as if she was afraid of that little thing. It is not much larger than a row boat

TESTIMONY OF JOHN SMITH.

JOHN SMITH, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Where do you reside?—A. I live at 229½ Virginia avenue.

Q. Are you in the service of the Fish Commission?—A. Yes, sir.

Q. In what capacity?—A. I was on Fish Commission car No. 3. I cook. I just got in day before yesterday.

Q. How long have you been in employment of the Commission?—A. Off and on for about five years. I cooked at Fort Washington two springs.

Q. What was your pay when first employed?—A. Thirty dollars.

Q. What is your pay now?—A. Forty-five dollars; but putting in \$15 for rations leaves me only \$30—no more than at first.

Q. Before that your rations were furnished to you, so that you got just as much out of it before?—A. Yes, sir. Before Professor Baird died he raised the cook's pay to \$45. I thought I would get the whole \$45, but when I put in \$15 I found I got just the same. I have been on the Fish Commission quite a while.

Q. Who employed you when you acted as cook at Fort Washing-

ton?—A. When I first went to Fort Washington Mr. Carswell—he is the gentleman who employed me to go to Fort Washington.

Q. While you were cook at Fort Washington, did you ever plank any shad for Commissioner McDonald and his friends?—A. Yes, sir; I did.

Q. How often; how many times do you suppose?—A. Sometimes once a week and sometimes twice a week. I did not take any notice of how many times; some weeks twice a week, and sometimes only once.

Q. Did he often bring a party of friends down there with him?—A. Well he came down several times. There were some Senators came down with him, so I was told. I do not know who they were. There were three gentlemen and himself, and one or two young men.

Q. And they took dinner at the mess?—A. Took dinner over at Mr. Worth's. Mr. Worth had a house over there, and they ate over there. I planked the shad in the basement, and they ate in the big dining-room there.

Q. Did they ever have any wine or whisky or anything to drink?—A. No, sir; not to my knowledge.

Q. Did you ever see them have anything to drink?—A. No, sir.

Q. Did you prepare a shad bake for Mr. Gill and his friends when they came down there?—A. I think Mr. Gill came down with Colonel McDonald. I did not bake any shad for him alone, but for the whole party. I was the cook, and cooked for anybody who came. I sometimes heard the names, but they have passed away now.

Q. How many times do you think the Commissioner or Mr. Gill were there with parties of gentlemen?—A. About three times. I was down there last spring. I will not say three times, but once or twice. I did not take any notice of how many times they came down there. I had to cook for the men, the seine haulers, and the men who got the spawn ate at the barracks. I did not take notice of how many times they were down there; either once or twice. I did not take much notice. They used to send me a day's notice to have planked shad, and, of course, I used to do it.

Q. Did you also prepare planked shad for Mr. O'Connor, who is connected with the Commission here, and some of his friends?—A. I do not think I did. If I did, it was not under his name. I did not hear his name called.

Q. Did not Mr. Worth send Daniel Moore to Mr. Harris, who was in charge of the seine, for the shad on such occasions?—A. Well, I do not know. Mr. Worth would come in the morning and say, "John, to-morrow there will be some parties down here," and to have planked shad about 4 or 5 o'clock. My shad used to be cut and cleaned for me, and I used to plank it. That is as much as I know about it.

Q. You generally cooked the dinner at Mr. Worth's house whenever he had company?—A. Mr. Worth had a cook of his own.

Q. You did not cook for Mr. Worth?—A. I only cooked for my regular mess and the crew.

Q. Did you ever hear that Mr. Worth received money for some of these shad dinners?—A. No, sir; I have not.

Q. Did you ever buy any whisky from the steamer *Corcoran* for Mr. Worth?—A. No, sir; I do not remember taking a drink on the *Corcoran* in my life.

Q. You never bought any whisky off the steamer *Corcoran* for Mr. Worth or anybody else?—A. No, sir; not in my life, to my knowing.

Q. Did you ever see Mr. Worth intoxicated?—A. No, sir; I have not. Mr. Worth always came into the kitchen pleasant, and I will say he is the pleasantest man I ever had anything to do with.

Q. You never saw him drunk?—A. I never saw him drunk in my life.

Q. Do you know whether he was in the habit of drinking?—A. No, sir; he worked on the No. 3 car with me. I never saw him take any drink at all. If he did I did not see him.

By Senator SQUIRE:

Q. You do not know whether he did or not?—A. Of course I can only say that I never saw him take a drink.

Q. If anybody else said he did would you contradict him?—A. I would not contradict anybody, except what my eyes see. I do not know what you see. I would not contradict anything you say you saw.

By the CHAIRMAN:

Q. And you saw him every day?—A. I saw him every day the Lord sent me. I was working under Mr. Worth at the time.

Q. You never saw him under the influence of liquor?—A. No, sir. His children were always playing around in the kitchen.

Q. Did you ever hear of men in the mess speak of Mr. Worth as a drinking man?—A. No, sir.

Q. Did not Colonel McDonald, Mr. Gill, and Mr. O'Connor come to Fort Washington on the *Blue Wing* when they came down?—A. Yes, sir; that is the boat they came down on.

Q. What was the *Blue Wing* used for; what did she do?—A. She was running backwards and forwards down there, but I do not know what they used her for.

Q. Did she go down the river after eggs?—A. I could not say, because I was up on the hill cooking.

Q. Did you help to clean up the house occupied by Mr. Worth after he left Fort Washington?—A. No, sir, I did not. I only kept my kitchen clean. I cleaned that out thoroughly before I left. There was a man, Dan Moore, to do that. I only looked after my cooking utensils.

Q. Did you ever see any whisky bottles lying around?—A. No, sir.

Q. Did you gather up any empty whisky bottles or demijohns around the house occupied by Mr. Worth and bring them to Washington?—A. No, sir. I carried a satchel down and brought my clothes back in it.

Q. You say you were on car 3?—A. No. 3 car, Fish Commission. I have been with Mr. Ellis going on five years.

Q. Among the supplies furnished for the car by the Government for the mess are there cigars and whisky and wines?—A. Not to my knowing, sir. All I know about it is what they furnished to the mess, of course. Each man puts in \$15. We have four regular men, five with myself. Of course I cook. The captain and three more, and of course I cook. That makes five. They all put in \$15 each, and I do the cooking and waiting on them.

Q. Are they in the habit of having liquors on your car?—A. No, sir. I have worked with Mr. Ellis for five years, and I never saw him take a drink the whole time I was on the car with him. He was always very quiet. I would not want to work for a better man. Last summer I was up at Wood's Holl. I took charge of the kitchen up there.

Q. Was there any drinking up there?—A. No, sir.

Q. As a rule it was not a drinking crowd?—A. I never saw any man drink about the kitchen where I worked. I had nothing to do outside.

By Senator SQUIRE:

Q. Do you know anything about who kept the whisky which is said

to have been bought from the proceeds of the sale of fish there? Did you take charge of it?—A. No, sir.

Q. Do you know whether there was any such whisky around the fort?—A. No, sir.

Q. Were any liquors bought with the shad money or any other fish money?—A. I did not see any whisky at all when I was down there.

Q. You do not know anything about that?—A. No, sir. All I received when I was down there were the groceries.

At 4 o'clock p. m. the subcommittee adjourned to meet at the call of the chairman.

WASHINGTON, D. C., *July 16, 1890.*

The subcommittee met at 10 o'clock a. m., pursuant to call of chairman.

Present: Senators Stockbridge (chairman) and Squire.

TESTIMONY OF JOHN PAUL BAUR.

JOHN PAUL BAUR, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Where is your residence?—A. 815 F street southwest.

Q. Washington, D. C.?—A. Yes, sir.

Q. Are you in the employ of the United States Fish-Commission?—A. No, sir.

Q. Have you been?—A. Yes, sir.

Q. When did you enter the employ of the Fish Commission?—A. In 1883.

Q. In what capacity?—A. Spawn taker.

Q. Have you been employed during the seasons of taking spawn since then?—A. Yes, sir.

Q. Right along?—A. Yes, sir.

Q. You are only employed part of the year?—A. Yes, sir.

Q. Just during the fishing season?—A. Yes, sir.

Q. Where were you employed this last summer?—A. Fort Washington.

Q. What was your compensation?—A. Fifty-five dollars a month.

Q. Who is in charge of the station there?—A. A Mr. S. G. Worth.

Q. What can you say about Mr. Worth's habits, is he a temperate man or otherwise?—A. I always thought he was a temperate man. I never saw anything to make me think otherwise.

Q. Have you been right there with him since he has been in charge there?—A. Yes, sir.

Q. If he had been an intemperate man do you think it would have come under your observation?—A. I think so; yes, sir.

Q. Have you ever known of Mr. Worth remaining at his house two or three days at a time and not coming down to the station?—A. No, sir.

Q. Do you know Sergeant Joyce?—A. Yes, sir.

Q. Is he a temperate man?—A. I think he is, sir. To the best of my knowledge he is.

Q. He lives near Mr. Worth, does he not, occupies a house near him?—A. Yes, sir; he lives within 25 yards of Mr. Worth's quarters.

Q. Do you know whether any one connected with the Fish Commission

at the Fort Washington Station kept any liquors for sale to employés there?—A. No, sir. I am certain that that was never done.

Q. Is it true that sometimes when the Mt. Vernon boat would stop there the seine men would slip forward and get a drink?—A. Well, sir, that has occurred.

Q. Have you ever known any employé at that Station to be incapacitated for attending to his duties on account of drinking?—A. Well, sir, that was only on one occasion; there was one man there by the name of John Blades. He was a seine mender. He was discharged for that.

Q. By whom was he discharged?—A. By the captain of the seine, Mr. L. G. Harron, by instructions from Mr. Worth.

Q. When was that?—A. Three springs ago. I think he was reinstated though. He was put back to work, I think; I am not positive.

Q. Did you ever know a man there by the name of Z. Vance Harris?—A. Yes, sir; I roomed with him.

Q. When was that, two years ago?—A. That was in 1888.

Q. The season of 1888. He was there only one season?—A. Yes, sir, and then about one month. He came late in the season.

Q. He was employed about a month?—A. Yes, sir.

Q. Was he a temperate man?—A. Well, I have seen him take a drink.

Q. But you would not call him an intemperate man?—A. No, sir; I would not.

Q. He took an occasional drink?—A. Yes, sir.

Q. You say you roomed with him?—A. Yes, sir.

Q. Did he ever tell you he went up to Mr. Worth's house to see him and found him at home there intoxicated?—A. No, sir.

Q. He never talked to you about Mr. Worth being an intemperate man?—A. No, sir. I never heard him speak of it. He seemed to be an intimate friend of Mr. Worth's. He was taken sick one time and I remember him going over in his quarters and staying a day or two.

Q. To whom do you refer as being taken sick, Mr. Worth or Mr. Harris?—A. Mr. Harris was taken sick, and being an intimate friend of Mr. Worth's he was taken over to Mr. Worth's quarters and nursed.

Q. Do you happen to remember whether at that time Mr. Worth was himself unwell and at home?—A. I remember him complaining once of having a chill.

Q. Do you think it was at the time of Mr. Harris's sickness when he was taken over to Mr. Worth's house?—A. I do not think it was.

Q. Your relations as a room-mate of Mr. Harris were such that if he had found Mr. Worth intoxicated for two or three days continuously at his house he would, would he not, have been apt to have mentioned this circumstance to you?—A. I think he would have been very apt to have.

Q. Do you know anything about what was done with the fish after they had taken the spawn. What did they do with the fish; what was the custom?—A. They were shipped to Washington.

Q. And sold?—A. Yes, sir.

Q. Do you know what was done with the money?—A. No, sir.

Q. Do you know whether the money received from this source was appropriated to pay the seine hands, the expenses of hauling the seine?—A. No, sir; I do not.

Q. Do you remember whether Mr. Worth was always on hand at the station on duty during the time of your service there?—A. Yes, sir.

Q. You do not remember of his being away for a day?—A. No, sir; I do not remember of his being away even for a day.

TESTIMONY OF CHARLES A. STEUART.

CHARLES A. STEUART, being duly sworn and examined, testified as follows :

By the CHAIRMAN :

Q. Where is your residence ?—A. Washington, D. C.

Q. Are you connected with the United States Fish Commission ?—A. No, sir; I can not say that I am.

Q. Have you ever been ?—A. Yes, sir; temporarily.

Q. During what years ?—A. I might make a little explanation there. I am really employed by the National Museum. In the spring of the year I would go out for a week or ten days, or possibly two weeks, during the shad season. That is about the time it would last. After that my connection with the Fish Commission ended.

Q. You have done that from year to year ?—A. Yes, sir; for ten years, with the exception of one year.

Q. You say you have been out with the Commission during the shad season. In what way, or for what purpose ?—A. To plant the young fry.

Q. You would go out and assist in that ?—A. Yes, sir; I would go out and plant in the different streams.

Q. Out on the car ?—A. No, sir; I generally went with the regular train; what we call side shipments. I have once or twice traveled on the car for a short while in years gone by.

Q. You stated that for some eight or ten years you had been in the habit of going out ?—A. Yes, sir.

Q. Is there usually a per cent. of loss in the transportation of young fish ?—A. Yes, sir.

Q. About what per cent. of loss ?—A. It generally varies. It is a hard matter to give a general per cent. of the loss of shad, because if the weather is cold then they carry better.

Q. What would be the general average of loss ?—A. I suppose 5 or 10 per cent. possibly—that is, if it is a fair, good trip.

Q. Please state the usual number of young fish taken out in each can ?—A. From 20,000 to 25,000 in a can.

Q. Do the size of the cans vary somewhat ?—A. No, sir; they are generally of average size. There have been cases where they carried more; but 25,000 would be the average.

Q. Do they put more or less of the young fish in a can according to the distance they are to be taken ?—A. Yes, sir; I do not know that they put in any less. They usually put possibly a few less —

Q. On a long trip than on a short trip ?—A. Yes, sir; the short trips are so short that it does not matter much how many they put in.

Q. You have stated about the number they put in ?—A. Yes, sir; about 20,000 or 25,000.

Q. Have you made any trips for the distribution of young shad this year ?—A. Yes, sir.

Q. State the number of trips made and in what waters the fish were planted this year.—A. We made, I guess, five or six trips this year, as near as I can recollect.

Q. Do you remember the waters in which you planted the fish ?—A. I can not remember all. The Mattaponi River.

Q. Where is that river ?—A. Between here and just the other side of Fredericksburgh—Milford's Station. The next trip was at Goldsbo-

rough, N. C. I have really forgotten the name of that river. The next trip was just the other side of Norfolk, in North Carolina, two different streams, two places. That is about all I can remember now.

Q. Were those streams nice streams in which to plant fish?—A. Yes, sir.

Q. What kind of fish did you take out?—A. Young fry shad.

Q. Give the number of fish said to have been taken and the number of cans used on each trip.—A. We used from 15 to 20 cans. I am speaking about these single trips I made on the regular train.

Q. Did you meet with any loss of fish on these trips?—A. Yes, sir.

Q. Above or below the average of loss?—A. Two trips were above the average.

Q. Can you state why that unusual loss occurred?—A. I could hardly give a correct reason for that. It has been a puzzle.

Q. Was it quite a noticeable increase above the average?—A. Yes, sir; it was quite an increase above the average. That trip that I speak of was what you might call an experimental trip. I had at that time considerably more than the average lot on a trip.

Q. You mean more in a can?—A. Yes, sir; and one can particularly was an experiment. The superintendent told me to see what I could do.

Q. It was done purposely as an experiment?—A. As I understand it.

Q. And the result was not favorable?—A. No, sir; I reported the fact.

Q. Have you any means of judging about what per cent. of loss there was on that trip where the cans were filled more than usual?—A. I think I reported at the time—if I recollect correctly I made a report—I think it was 40 per cent., 30 or 40 per cent. That was a pretty big loss.

Q. Was it your custom to make a report upon your return from each trip?—A. Yes, sir; I always make a report of what per cent. is lost; how much is lost.

Q. How can you determine that per cent. of loss?—A. We know how many we have got in the cans, and we can tell about the loss. You might say we know exactly how many are there, and then we know how many are dead, because we generally draw those off.

Q. You take those off?—A. Yes, sir; we draw the dead fish away. They go to the bottom and we draw them off, and in that way we can tell pretty nearly the per cent.

Q. From your experience as messenger in the distribution of shad what do you honestly consider to be the condition of the fish taken out this year as compared with former years; that is, the vitality and vigor of the fish?—A. I can not say that I am really capable of judging that, because, as I said before, I only handled the fish every spring of the year, and only took just so many, which were put in a can. They would tell me there were so many cans of fish to go to such and such a point. I did not work among the jars and see them hatched.

Q. You can not tell whether the fish were as healthy and as vigorous this year as in former years?—A. I could not say, positively, whether they were or not. Of course, there are some shipments that would be hatched out that possibly would be a little weaker than others.

Q. Were they all equally strong and healthy fish; are they all equally strong in every case?—A. I do not think they would be.

Q. Do you not think if all the young fish had been properly handled in hatching and nursing many of them would have been strong enough to have been planted in other rivers at a greater distance from the hatchery?—A. I did not know that there was any fault in regard to the

hatching, and I did not know that they were planted at a nearer point because they were weak.

Q. To the best of your knowledge and belief, what would you think was a fair and honest count of the fish in each can this year as compared with previous years?—A. In that case I am not able to say, because I had no way of counting the fish. Of course, after they were delivered to me in cans they would tell me there were so many thousand fish in those cans.

Q. Have you any reason to think that that number was placed too high?—A. On one occasion I thought particularly that they seemed a little high, but as I say, I was not being able to see all, and had no occasion to count them in the cans. By looking into the cans simply you can not always tell exactly.

Q. If your attention was specially called to it and you endeavored to estimate them when they were in the can, could you estimate the number of fish as closely as the person who put them up?—A. No, sir.

Q. It would be impossible to do it?—A. I think so.

Q. Do you deem it advisable to carry over 50,000 young shad in a can on a long trip as far as Florida?—A. I think it would be too many in a can.

Q. About how many would be the number?—A. About 25,000; possibly a little more.

Q. Was a can ever delivered to you which was said to contain 50,000?—A. That is just the point I spoke about awhile ago.

Q. It was done rather as an experiment?—A. Yes, sir.

Q. And it resulted unfavorably?—A. Yes, sir; that is the shipment of which I said we lost about 30 or 40 per cent. I have really forgotten what I reported then, but we have it at the office there. But that is to the best of my recollection.

Q. The Museum and the Fish Commission seem to be in pretty close relations. They borrow men back and forth as occasion requires, do they not?—A. Not to my knowledge.

Q. That is you are detailed from the Museum during certain seasons to do this work?—A. No, sir; with the exception of one or two years, my work with the Commission came out of my annual leave. It was taken out of my leave. I would make an application for a leave of absence and that would be granted, and I would use that in the spring of the year in traveling for the Commission. I was not paid by the Fish Commission, only my actual traveling expenses.

Q. You were not paid by the Commission?—A. No, sir, except as I said, one or two years, several years back. Then at that time I was transferred to the Commission.

Q. This year did you go on this trip during your leave from the Museum?—A. Yes, sir; and every day of it has been taken from my regular leave.

Q. And you did it without compensation?—A. Yes, sir, except having my actual expenses paid. The reason I did that was because I liked the work, and after being closed up in a building all the winter in the spring of the year I felt that I would like to go out on a trip.

Q. That is an economical arrangement for the Fish Commission. If you did not go somebody would have to go who was on pay, is not that so?—A. That depends. The trips that I made they would have to have a new man, and he possibly would not be an expert.

Q. That is just what I asked you. It is an economical arrangement for the Fish Commission?—A. Yes, sir.

Q. You donate yourself?—A. Yes, sir.

Q. Let me ask you this question: It has been stated in the New York papers, which published the articles reflecting upon the management of the Fish Commission—you have seen some of those articles, have you not?—A. No, sir; I have not. I have been told about them, but I have been out of the city lately and have not seen any of those papers.

Q. The substance of the charges is that the general management of affairs at the Fish Commission was very loose; that the employés there came and went about as they pleased, and that there was a lack of order and system and business methods. Now, from what you have seen and know, being interested at any rate in the work, what would you say on that point?—A. I have not seen anything like that; but I have been in those offices a very little time. I do not think I spent two hours at any one time in the building. I would go there, get an order for such a trip, and would go up town and get the fish and put them in a wagon. Probably when I came back I would have to go to another place. From what I have seen I have not seen anything really that would lead me to believe there was anything loose about it.

TESTIMONY OF HERBERT A. GILL, recalled.

HERBERT A. GILL, being recalled, testified as follows:

The WITNESS. Here is a list of appropriations for the fiscal year beginning July 1, 1884, and ending for the fiscal year June 30, 1890.

By Senator SQUIRE:

Q. That is a list of the appropriations?—A. Yes, sir.
The list of appropriations is as follows:

Appropriations for the U. S. Commission of Fish and Fisheries.

FISCAL YEAR 1884-'85.

For the propagation of food fishes: For the introduction by the U. S. Fish Commission into, and to increase in, the waters of the United States of useful food-fishes, including lobsters, oysters, and other shell-fish, and for continuing the inquiry into the causes of the decrease of the food-fishes of the United States, including salaries or compensation of all necessary employees.....	\$125,000.00
For expenses of the office of the U. S. Fish Commission: For rent of rooms in the city of Washington.....	1,380.00
For the maintenance of fish-ponds: For the maintenance of the United States fish-ponds in Washington and elsewhere, and the distribution of carp and other young fish, including salaries or compensation of all necessary employees.....	45,000.00
For the maintenance of vessels: For the maintenance of the vessels of the United States Fish Commission, including salaries or compensation of all necessary employees, for the storage and wharfage, and for the boats, apparatus, and machinery required for use therewith.....	45,000.00
For completion of the car for the distribution of carp and other useful food fishes to distant portions of the United States, authorized by act approved March three, eighteen hundred and eighty-three, and its equipment.....	4,500.00
And the sum of five thousand five hundred dollars appropriated by the act approved March third, eighteen hundred and eighty-three, for the construction of a car for the distribution of carp and other useful food fishes to distant portions of the United States, be and the same is hereby, reappropriated and made available during the fiscal year eighteen hundred and eighty-five.	
For completion of the necessary constructions at Wood's Holl Harbor, Massachusetts, and their equipment, for the propagation of and investigation in regard to useful sea-fishes and other marine animals.....	20,000.00

For the inquiry of food-fishes: For collecting statistics of the sea-coast and lake fisheries of the United States, especially those covered by the Washington treaty of eighteen hundred and seventy-one, including salaries and compensation of all necessary employees.....	\$3,500.00
For illustrations for the report on food-fishes: For preparation of illustrations for the report of the United States Commissioner of Fish and Fisheries.....	1,000.00
For propagation of food-fishes.....	12,000.00
For the maintenance of the United States fish-ponds in Washington and elsewhere, and the distribution of carp and other young fish, including salaries or compensation of all necessary employees, being a deficiency for the fiscal year eighteen hundred and eighty-five.....	803.08
	258,183.08

FISCAL YEAR 1885-'86.

Propagation of food-fishes: For the introduction by the United States Fish Commission into and the increase in the waters of the United States of food-fishes and other useful products of the waters, including lobsters, oysters, and other shell-fish, and for continuing the inquiry into the fisheries of the United States and their subjects, and for such general and miscellaneous expenditures as the Commissioner of Fish and Fisheries may find necessary to the prosecution of his work, including salaries or compensation of all necessary employees.....	130,000.00
And the Secretary of the Treasury is authorized to detail from time to time for duty under the Commissioner of Fish and Fisheries any officers and men of the Revenue-Marine Service whose services can be spared for such duty.	
Rent of office United States Fish Commission: For rent of rooms in the city of Washington	2,000.00
Maintenance of fish-ponds: For the preparation and maintenance of fish-ponds in Washington and elsewhere, and the distribution of the eggs and young of the whitefish, salmon, shad, cod, carp, and other useful inhabitants of the waters, including salaries or compensation of all necessary employees.....	45,000.00
Maintenance of vessels: For the maintenance of the vessels of the United States Fish Commission, and for boats, apparatus, machinery, and the other facilities required for use with the same, including salaries or compensation of all necessary employees.....	45,000.00
Fish Commission buildings, Wood's Holl, Massachusetts: For increasing the facilities at Wood's Holl, Massachusetts, station for the artificial propagation of useful marine animals, such as cod, halibut, mackerel, lobsters, oysters, and so forth, and the investigations connected therewith, to be immediately available.....	20,000.00
Sailing vessel, food-fishes: For construction of a suitable sailing vessel for the purpose of collecting the spawning cod and other useful food-fishes on their breeding grounds off the coast and conveying them to the shore station of the Commission, to be made immediately available.....	14,000.00
<i>Provided, however,</i> That the Secretary of the Navy is authorized and directed to transfer from the Navy to the United States Fish Commission a sailing vessel suitable for such service, if any such vessel can be spared from said service, in which event the above sum shall not be expended.	
To supply a deficiency in the appropriation for the propagation of food-fishes for the fiscal year ending June thirtieth, eighteen hundred and eighty-six.....	12,000.00
	268,000.00

FISCAL YEAR 1886-'87.

Propagation of food-fishes: For the introduction by the United States Fish Commission into and the increase in the waters of the United States of food-fishes and other useful products of the waters, including lobsters, oysters, and other shell-fish, and for continuing the inquiry into the fisheries of the United States and their subjects, and for such general and miscellaneous expenditures as the Commissioner of Fish and Fisheries may find necessary to the prosecution of his work, including salaries or compensation of all necessary employees.....	130,000.00
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Fish-hatchery at Duluth, Minnesota: For the establishment of a fish-hatchery on Lake Superior, at or near Duluth, Minnesota.....	\$10,000.00
<i>Provided</i> , That the city of Duluth shall furnish without charge a suitable site for said fish-hatchery.	
Rent of office United States Fish Commission: For rent of rooms in the city of Washington.....	2,040.00
Maintenance of fish-ponds: For the preparation and maintenance of fish-ponds in Washington and elsewhere, and the distribution of the eggs and young of the whitefish, salmon, shad, cod, carp, and other useful inhabitants of the waters, including salaries or compensation of all necessary employees.....	45,000.00
Maintenance of vessels: For the maintenance of the vessels of the United States Fish Commission, and for boats, apparatus, machinery, and the other facilities required for use with the same, including salaries or compensation of all necessary employees.....	45,000.00
Steamer Albatross: For the construction and introduction of new boilers for the steamer Albatross, and other necessary general repairs.....	20,000.00
For expenses of voyage from New York to San Francisco, including cost of coal and other necessary supplies	7,500.00
	259,540.00

FISCAL YEAR 1887-'88.

Propagation of food-fishes: For the introduction by the United States Fish Commission into and the increase in the waters of the United States of food-fishes and other useful products of the waters, including lobsters, oysters and other shell-fish, and for continuing the inquiry into the fisheries of the United States and their subjects, and for such general and miscellaneous expenditures as the Commissioner of Fish and Fisheries may find necessary to the prosecution of his work, including salaries or compensation of all necessary employees.....	130,000.00
Fish-hatchery on the Columbia River: For the establishment of a salmon-hatchery, upon the Columbia River, its tributaries or their branches	10,000.00
<i>Provided</i> , That if, in the opinion of the United States Fish Commissioner, the existing laws of Oregon and Washington are not sufficient for the protection of salmon in the Columbia River and its tributaries, this appropriation shall not be available until the legislatures of the State of Oregon and of Washington Territory shall have enacted such additional legislation as, in the opinion of the Fish Commissioner, shall be necessary to protect the salmon from improper capture and destruction.	
Rent of office United States Fish Commission: For rent of rooms in the city of Washington.....	2,040.00
Maintenance of fish-ponds: For the preparation and maintenance of fish-ponds in Washington and elsewhere, and the distribution of the eggs and young of the whitefish, salmon, shad, cod, carp, and other useful inhabitants of the waters, including salaries or compensation of all necessary employees.....	45,000.00
Maintenance of vessels: For the maintenance of the vessels of the United States Fish Commission and for boats, apparatus, machinery, and other facilities required for use with the same, including salaries or compensation of all necessary employees	45,000.00
Fish-ponds, Monument Lot: For restoring the drainage of the United States fish-ponds in Washington, destroyed by the filling up of the flats, and for an increased supply of water, to be immediately available	5,000.00
Steam-vessels, food-fishes: For new boilers and for a thorough repair and refitting of the steamer <i>Fish Hawk</i>	11,500.00
That the Commissioner of Fish and Fisheries shall submit to Congress at its next session a detailed statement of the expenditures for the fiscal year eighteen hundred and eighty-seven under all appropriations for "Propagation of food-fishes;" and annually thereafter a detailed statement of expenditures under all appropriations for "Propagation of food-fishes" shall be submitted to Congress at the beginning of each session thereof.	
Fish Commission: For salary of the Commissioner of Fish and Fisheries, from date of qualification in office, February eighteenth to June thirtieth, eighteen hundred and eighty eight, at the rate of five thousand dollars per annum, or so much thereof as may be necessary....	1,840.68
	250,380.68

FISCAL YEAR 1888-'89.

U. S. Commission of Fish and Fisheries: For compensation of the Commissioner	\$5,000.00
Propagation of food fishes: For the introduction by the United States Fish Commission into and the increase in the waters of the United States of food-fishes and other useful products of the waters, including lobsters, oysters, and other shell-fish, and for such general and miscellaneous expenditures as the Commissioner of Fish and Fisheries may find necessary to the prosecution of his work, including salaries or compensation of all necessary employees.....	130,000.00
<i>Provided</i> , That the building known as the Armory Building, Washington, District of Columbia, shall be occupied, as at present, jointly by the United States Commission of Fish and Fisheries and the National Museum.	
Rent of office United States Fish Commission: For rent of rooms in the city of Washington	2,500.00
Distribution of food fishes: For the distribution of the eggs and young of the whitefish, salmon, shad, carp, cod, lobster, and other useful inhabitants of the waters, including salaries, or compensation of all necessary employees	31,180.00
Establishment of stations: For the construction of buildings, ponds, and appliances for a station for fish-culture at Neosho, Missouri	8,000.00
For maintenance of same.....	5,000.00
Maintenance of vessels: For the maintenance of the vessels and steam launches of the United States Fish Commission, and for boats, apparatus, machinery, and other facilities required for use with the same, including salaries or compensation of all necessary civilian employees.	43,900.00
Inquiry respecting food-fishes: For continuing the inquiry into the causes of the decrease of food-fishes in the lakes, rivers, and coast waters of the United States, and for the study of the waters of the interior in the interests of fish-culture; for the study of the methods and relations of the fisheries with a view to their improvement; for the exploration of the fishing grounds of the South Atlantic, Gulf, and Pacific coasts with a view to the development of the commercial fisheries, and for the preparation of reports relating to the inquiry, including salaries or compensation and field expenses of scientific assistants, fishery experts, and other necessary employees.....	20,000.00
Statistical inquiry: For the collection and compilation of the statistics of the fisheries of all portions of the United States, including persons employed, capital invested, and the quantity and value of the products, and for such general and miscellaneous expenditures as the Commissioner may find necessary in the prosecution of this work, including salaries or compensation of all necessary employees.....	10,000.00
Schooners <i>Sarah C. Wharf</i> and <i>Champion</i> : To pay damages sustained by the schooner <i>Sarah C. Wharf</i> , five hundred and twelve dollars and sixty cents, and by the schooner <i>Champion</i> , four hundred and twenty-five dollars by collision with the United States Fish Commission steamer <i>Fish Hawk</i> , on February twenty-sixth, eighteen hundred and eighty-six; in all.....	*937.60
To enable the Secretary of the Treasury to pay Mrs. Mary H. C. Baird, widow of the late Spencer F. Baird, in full compensation for the services and expenses of the said Spencer F. Baird during his administration of the office of Commissioner of Fish and Fisheries, including rent of rooms for the use of said Commission from February twenty-fifth, eighteen hundred and seventy-one, to the time of his death, in August, eighteen hundred and eighty-seven.....	*25,000.00
Fish-hatchery, Duluth, Minnesota: For the completion of the fish-hatchery on Lake Superior, near Duluth, Minnesota, including its equipment water supply, and the construction at the station of ponds for the cultivation of trout.....	4,000.00
Maintenance of vessels of the United States Fish Commission: For the maintenance of the vessels and steam-launches of the United States Fish Commission, and for boats, apparatus, machinery, and other facilities required for the use with the same, including salaries or compensation of all necessary civilian employees.....	10,000.00

* Not disbursed by the Fish Commission.

For general and miscellaneous expenses incurred during the fiscal year ending June thirtieth, eighteen hundred and eighty-nine, in connection with the propagation and distribution of food-fishes and maintenance of vessels, or so much thereof as may be necessary, being a deficiency for the fiscal year eighteen hundred and eighty-nine.....

\$3,000.00

298,517.60

FISCAL YEAR 1889-'90.

United States Fish Commission: For the construction of a quarters building at the United States Fish Commission station, Baird, California, and its equipments

4,000.00

United States Commission of Fish and Fisheries: For compensation of Commissioner.....

5,000.00

Propagation of food-fishes:

For the introduction by the United States Fish Commission into and the increase in the waters of the United States of food-fishes and other useful products of the waters, including lobsters, oysters, and other shell-fish, and for such general and miscellaneous expenditures as the Commissioner of Fish and Fisheries may find necessary to the prosecution of his work, including salaries or compensation of all necessary employees.....

130,000.00

For altering and fitting up the interior of the Armory Building on the Mall, city of Washington, now occupied as a hatching station, for the accommodation of the offices of the United States Fish Commission and for general repairs to said building, including the heating apparatus, and for repairing and extending the outbuildings.....

*7,000.00

Or so much thereof as may be necessary, the same to be immediately available and to be expended under the direction of the Architect of the Capitol; and for the purpose above named the Secretary of the Smithsonian Institution is hereby required to move from the second and third stories of this building all properties except such as are connected with the shops hereinafter named, under his control; and the work shops now in the second story of said building shall be transferred to and provided for in the third story thereof. And the Architect of the Capitol is hereby directed to examine and make report to Congress at its next regular session as to the practicability and cost of constructing a basement story under the National Museum Building.

Distribution of food-fishes: For the distribution of the eggs and young of the whitefish, salmon, shad, carp, cod, lobster, and other useful inhabitants of the waters, including salaries or compensation of all necessary employees

35,000.00

Maintenance of vessels: For the maintenance of the vessels and steam-launches of the United States Fish Commission, and for boats, apparatus, machinery, and the other facilities required for use with the same, including salaries or compensation of all necessary civilian employees

43,900.00

Inquiry respecting food-fishes: For continuing the inquiry into the causes of the decrease of food-fishes in the lakes, rivers, and coast waters of the United States, and for the study of the waters of the interior in the interests of fish-culture; for the study of the methods and relations of the fisheries, with a view to their improvement; for the exploration of the fishing grounds of the South Atlantic, Gulf, and Pacific coasts, with a view to the development of the commercial fisheries, and for the preparation of reports relating to the inquiry, including salaries or compensation and field expenses of scientific assistants, fishery experts, and other necessary employees.....

20,000.00

Statistical inquiry: For the collection and compilation of the statistics of the fisheries of all portions of the United States, including persons employed, capital invested, and the quantity and value of the products, and for such general and miscellaneous expenditures as the Commissioner may find necessary in the prosecution of this work, including salaries or compensation of all necessary employes

10,000.00

That the sum of five thousand dollars, appropriated by the act approved October second, eighteen hundred and eighty-eight, for the maintenance of the fish-cultural station at Neosho, Missouri, be, and the same is hereby, reappropriated and made available during the fiscal year 1890.

*Not disbursed by the Fish Commission.

Fish-hatchery in Lake County, Colorado: For the construction of a Government trout-breeding and distributing station in Lake County, Colorado.....	\$15,000.00
Fish-hatchery, Maine: For the purchase of ground, construction of buildings and ponds, and purchase of equipment of fish-hatchery and rearing stations near Craig's Brook, Reed's Pond, and Branch Pond, Maine.....	11,000.00
Fish-hatchery on Lake Erie: For the purpose of establishing and equipping a station at some convenient point on Lake Erie, to be designated by the Commissioner of Fish and Fisheries, for taking spawn and the propagation of white-fish.....	20,000.00
Propagation of food-fishes: For the introduction by the United States Fish Commission into, and the increase in the waters of the United States of food-fishes, and other useful products of the waters, including lobsters, oysters, and other shell-fish, and for such general and miscellaneous expenditures as the Commissioner may find necessary to the prosecution of his work, including salaries or compensation of all necessary employes.....	20,000.00
Maintenance of vessels: For the maintenance of the vessels and steam launches of the United States Fish Commission, and for boats, apparatus, and machinery required for use with the same, including salaries or compensation of all necessary civilian employes.....	10,000.00
	330,900.00

The WITNESS. Next I have prepared a list of the employes, what you may call permanent and temporary employes, who were employed in connection with the Cincinnati Exposition during the fiscal year 1888-'89, which does not enter into the regular operations of the Commission; yet some of the employes were transferred to that work.

By the CHAIRMAN:

Q. And some of the regular employes served on that?—A. For a part of the year; yes, sir.

The list of employes referred to above is as follows:

Employes Cincinnati Exposition, 1888-'89.

Name.	Service.	Period of time.	Rate of pay.	Total of pay.
Abbott, W. H.....	Assistant Cincinnati Exposition.	June 12 to Aug. 31; Nov. 1 to Dec. 31, 1888.	\$50 per month....	\$231.66
Do.....	Repairing fish casts..	Feb. 1 to Mar. 30, 1889; 447 hours.	33 cents per hour..	147.50
Bryan, E. C.....	Clerk.....	June 1 to Aug. 31, 1888....	\$65 per month....	195.00
Do.....	do.....	Feb. 1 to Mar. 31, 1889....	\$100 per month....	200.00
Boyle, R. M.....	Carpenter, Cincinnati Exposition.	June 27 to 30, 1888, 4 days..	\$3 per day.....	12.00
Do.....	do.....	July 1 to 10, 1888, 56 hours	37½ cents per hour..	21.00
Burns, F. H.....	Laborer, Cincinnati Exposition.	June 27 to 30, 1888, 4 days	\$1.50 per day.....	6.00
Do.....	do.....	July 1 to 10, 1888, 74½ hours	18¾ cents per hour..	13.96
Badger, H. P.....	Carpenter, Cincinnati Exposition.	July 7 to 14, 1888, 92 hours	25 cents per hour..	23.00
Boswell, William..	do.....	July 2 to 5, 1888, 24 hours..	37½ cents per hour..	9.00
Burton, Louisa....	Scrubbing and cleaning office.	Aug. 27 to Nov. 3, 1888, 10 weeks.	\$2 per week.....	20.00
Bingham, Chas....	Laborer, Cincinnati Exposition.	Nov. 9 to 21, 1888, 92 hours	17½ cents per hour..	16.10
Denton, S. F.....	Artist, Cincinnati Exposition.	Feb. 18 to Mar. 6; Apr. 1 to 5, 1889, 49½ hours.	75 cents per hour..	37.12
Diller, Charles....	Carpenter, Cincinnati Exposition.	Feb. 21 to Mar. 2, 1889, 8½ days.	\$3 per day.....	25.50
Edwards, Cyrus...	do.....	July 6 to 14, 1888, 95½ hours	25 cents per hour..	23.88
Gaskins, Madison..	Laborer, Cincinnati Exposition.	June 27 to 30, 1888, 4 days	\$1.50 per day.....	6.00
Do.....	do.....	July 1 to 10, 1888, 82 hours	18¾ cents per hour..	15.37
Greenman, M. J....	Microscopist, Cincinnati Exposition.	July 1 to Aug. 31, 1888....	\$30 per month....	60.00
Green, George.....	Laborer, Cincinnati Exposition.	Nov. 9 to 15, 1888, 51½ hours	17½ cents per hour..	9.01
Horan, W. H.....	Tinsmith, Cincinnati Exposition.	June 12 to 30, 1888, 17 days.	\$2 per day.....	34.00

Employés Cincinnati Exposition, 1888-89—Continued.

Name.	Service.	Period of time.	Rate of pay.	Rate of pay.
Horan, W. H	Laborer, Cincinnati Exposition.	July 1 to Aug. 31, 1888.....	\$40 per month.....	\$80 00
Do.....	do.....	Feb. 1 to Mar. 31, 1889.....	\$50 per month.....	100.00
Hurdle, A. J	Carpenter, Cincinnati Exposition.	June 27 to 30, 1888, 3 days..	\$3 per day	9.00
Do.....	do.....	July 1 to 5, 1888, 24 hours..	37½ cents per hour	9.00
Haske, A. B.....	Laborer, Cincinnati Exposition.	June 27 to 30, 1888, 4 days..	\$1.50 per day	6.00
Do.....	do.....	July 1 to 10, 1888, 82 hours.	18¾ cents per hour	15.37
Hudson, Charles B.	Draughtsman, Cincinnati Exposition.	June 18 to Sept. 10, 1888, 528 hours.	35 cents per hour	184.80
Hopster, Herman ..	Laborer, Cincinnati Exposition.	Nov. 9 to 15, 1888, 51½ hours.	17½ cents per hour.	9.01
Jackson, E.....	do.....	June 27 to 30, 1888, 4 days..	\$1.50 per day	6.00
Innes, James B	do.....	Oct. 27 to Nov. 21, 1888, 106 hours.	17½ cents per hour.	18.55
Kesler, W. H. H.....	Carpenter, Cincinnati Exposition.	June 12 to 30, 1888, 17 days.	\$3 per day	51.00
Kern, J. W.....	do.....	July 6 to 24, 1888, 235 hours.	25 cents per hour	58.75
Klocke, Louis.....	Laborer, Cincinnati Exposition.	July 21 to 26, 1888, 62 hours.	17½ cents per hour.	10.85
Klocke, H. W	do.....	July 16 to 26, Nov. 9 to 15, 1888, 170 hours.	do	29.75
Klocke, Charles.....	do.....	July 21 to 26, 1888, 62 hours.	do	10.85
Klocke, William	do.....	Nov. 9 to 15, 1888, 51½ hours.	do	9.01
Lewis, R. E.....	Office messenger, Cincinnati Exposition.	July 11 to Aug. 31, 1888, 2½ months.	\$50 per month	133.33
Lieberman, George.	Laborer, Cincinnati Exposition.	July 6 to Aug. 17; Oct. 25 to Nov. 21, 1888, 651 hours.	17½ cents per hour.	113.92
Do.....	do.....	Sept. 7 to 10, 1888, 4 days..	\$1.50 per day	6.00
Leger, Joseph.....	Carpenter, Cincinnati Exposition.	July 21 and 22, 1888, 20 hours.	25 cents per hour	5.00
Landon, Charles	do.....	Oct. 27 to Nov. 21, 1888, 105 hours.	25 cents per hour	26.25
Luscombe, C. R	Repairing models of fishing vessels.	Feb. 1 to Mar. 23, 1889, 496 hours.	30 cents per hour	148.80
Morgan, W. H	Laborer, Cincinnati Exposition.	June 8, 1888, to Jan. 31, 1889.	\$60 per month	466.00
Mark, Theodore	do.....	July 6 to 30, 1888, 264 hours	17½ cents per hour.	46.20
Noebe, Fritz	Carpenter, Cincinnati Exposition.	July 3 to 10, 1888, 48 hours.	37½ cents per hour.	18.00
Nicholson, W. J. H.	Copyist, Cincinnati Exposition.	Sept. 6 to 8, 1888, 21 hours	30 cents per hour	6.30
Nolan, Peter.....	Laborer, Cincinnati Exposition.	Oct. 24 to 27, 1888, 14½ hours.	17½ cents per hour	2.54
Pollock, M. B	do.....	July 3 to 10, 1888, 66½ hours.	17½ cents per hour.	12.46
Page, W. F	In charge Fish Culture, Cincinnati Exposition.	July 1 to Oct 31, 1888.....	\$100 per month.....	400.00
Rue, M. F.....	Laborer, Cincinnati Exposition.	June 27 to 30, 1888, 4 days	\$1.50 per day	6.00
Do.....	do.....	July 1 to 10, 1888, 82 hours.	18¾ cents per hour.	15.37
Sauerhoff, W. P.....	Assistant in charge of fish culture, Cincinnati Exposition.	June 1, 1888, to Jan. 31, 1889.	\$75 per month	600.00
Seal, W. P	In charge aquaria, Cincinnati Exposition.	June 1 to Oct. 31, 1888	\$125 per month.....	625.00
Skinner, J. E.....	Laborer, Cincinnati Exposition.	June 27 to 30, 1888, 4 days.	\$1.50 per day	6.00
Do.....	do.....	July 1 to 10, 1888, 84 hours.	18¾ cents per hour.	15.75
Singleton, R. F.....	Carpenter, Cincinnati Exposition.	July 8 to 14, 1888, 79 hours.	25 cents per hour..	19.75
Stach, Henry	do.....	July 21 to 22, 1888, 20 hours	do	5.00
Sullivan, R. B.....	Laborer, Cincinnati Exposition.	July 22 to 30, 1888, 98 hours.	17½ cents per hour.	17.10
Sullivan, James.....	do.....	Nov. 9 to 15, 1888, 51½ hours.	do	9.01
Vogel, Edward.....	do.....	July 17 to 26, Nov. 9 to 15, 1888, 157½ hours.	do	27.56
Vandegrift, Wm	do.....	Nov. 9 to 21, 1888, 92 hours.	do	16.10
Winkelbach, Wm.....	do.....	July 6 to 26, 1888, 216 hours.	do	37.80
Wood, Alonzo	Carpenter, Cincinnati Exposition.	July 6 to 24, 1888, 231 hours	35 cents per hour..	80.85
Waterfield, S	Laborer, Cincinnati Exposition.	Nov. 7 to 15, 1888, 66 hours.	17½ cents per hour.	11.55
Yeatman, P. T	Assistant, Cincinnati Exposition.	June 5 to July 31, 1888	\$60 per month.....	112.00
				4,703.68

The WITNESS. Here are statements for the fiscal years 1884-'85, 1885-'86, 1886-'87, 1887-'88, 1888-'89, 1889-'90, of permanent and temporary employes of the Commission. That is all paid for services in connection with the operations of the Commission.

By Senator SQUIRE :

Q. Do these comprise all payments for services during these several years ?—A. Yes, sir.

By the CHAIRMAN :

Q. And each man's name given ?—A. Yes, sir; arranged alphabetically—character of service, period of time, rate of pay, total pay, and where employed. All of these had to be taken off of slips, going over the vouchers first, and arranged alphabetically and boiled down, and finally put in this shape.

Q. Have you arranged it in such manner—say, here is William Boulton, watchman—has he been in continual service ?—A. This indicates from July 1, 1884, to September 30, 1884, and June, 1885, \$10 a month, the total amount paid being \$40.

Q. If that man were changed to some other place and the character of his duties changed, and his compensation changed, would that be shown here ?

Senator SQUIRE. It shows for itself.

The WITNESS. Where a man is paid different rates separate entries are made. These statements I think are correct. Great care has been taken in getting them up, and I think they can be thoroughly relied upon. They are not cooked up in any way.

The statements referred to above are as follows :

FISCAL YEAR 1884-'85.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Addison, A. C.	Clerk	July 1, 1884, to June 30, 1885	\$75.00	Per month	\$900.00	Office of accounts.
Allister, Wm. F.	do	July 1, 1884, to Nov. 30, 1884	30.00	do	150.00	Clerk to engineer, Wood's Holl, Mass.
Anderson, Samuel	Cook	July 1, 1884, to Aug. 31, 1884	30.00	do	60.00	St. Jerome's, Md.
Angell, Frank I.	Assistant	May 16 to June 30, 1885	100.00	do	151.61	Civil engineer, Woods Holl, Mass.
Atkins, Charles G.	Superintendent Maine stations	July 1, 1884, to June 30, 1885	150.00	do	1,800.00	Maine salmon stations.
Baldwin, A. H.	Assistant	do	50.00	do	600.00	Arrangement of collections.
Bartol, John D.	General assistant	July 1, 1884, to Oct. 22, 1884	55.00	do	204.03	Havre de Grace, Md.
Bean, B. A.	do	Jan., 1885	75.00	do	75.00	Arrangement of collections.
Bean, T. H.	Assistant	Apr. 1 to June 30, 1885	166.66	do	499.98	Do.
Benedict, James E.	Naturalist	July 1, 1884, to June 30, 1885	116.66	do	1,399.92	Steamer <i>Albatross</i> .
Boulton, William	Watchman	July 1 to Sept. 30, 1884, and June, 1885.	10.00	do	40.00	Alpena, Mich.
Bower, Seymour	Assistant superintendent, Maine	July 1, 1884, to June 30, 1885	125.00	do	1,500.00	Michigan stations.
Bowser, James A.	Laborer	Oct. 13 to 17, 1884	1.50	Per day	7.50	Central station.
Do	Cook	Nov. 21 to Dec. 31, 1884	30.00	Per month	40.00	Car No. 1.
Do	do	Jan. 1 to Feb. 28, 1885	45.00	do	90.00	Do.
Do	do	Apr. 27 to 30, 1885	45.00	do	6.00	Do.
Do	do	May 1 to June 30, 1885	45.00	do	90.00	Do.
Brauer, Arthur	Assistant messenger	Feb. 23 to May 31, 1885	50.00	do	160.00	Carp distribution.
Brittain, Wm. H.	Office messenger	July, 1884, to June 30, 1885	25.00	do	300.00	General offices.
Brown, John E.	Store-keeper, distribution	July 1 to Aug. 31, 1884	85.00	do	170.00	Also in distribution of fish.
Do	Store-keeper, equipment	Sept. 1, 1884, to June 20, 1885	80.00	do	800.00	Do.
Bruner, H. L.	Assistant	July 21 to Aug. 27, 1884	2.00	Per day	76.00	Inquiry Wood's Holl, Mass.
Buck, H. H.	Fish culturist	Oct. 27 to Nov. 25, 1884	80.00	Per month	79.56	Maine stations.
Do	do	Apr. 1 to June 13, 1885	75.00	do	109.19	Do.
Burton, Elijah C.	Messenger	July, 1884, to Feb. 28, 1885	6.00	do	48.00	Wytheville, Va.
Bush, C. E.	Clerk	July, 1884	35.00	do	35.00	Arrangement of collections, New Haven, Conn.
Do	do	Oct. 1, 1884, to June 30, 1885	40.00	do	360.00	Do.
Bush, K. J.	do	July, 1884	45.00	Per month	45.00	Do.
Do	do	Sept. 23, 1884, to June 30, 1885	45.00	do	417.00	Do.
Butler, George	Cook	Dec. 1, 1884, to Jan. 31, 1885	39.30	do	78.60	Havre de Grace, Md.
Butler, George E.	Office messenger	July 1 to Oct. 31, 1884	45.00	do	180.00	Commissioner's office, Wood's Holl, Mass.
Do	do	Nov. 1, 1884, to June 30, 1885	35.00	do	280.00	Commissioner's office, Washington, D. C.
Carswell, James	Distribution messenger	July 1 to Aug. 12, 1884	75.00	do	104.03	Distribution of fish.
Do	do	Oct. 29 to Dec. 31, 1884	2.50	Per day	160.00	Do.
Do	do	Jan. 1 to Mar. 31, 1885	90.00	Per month	270.00	Do.
Do	Station superintendent	Apr. 1 to June 30, 1885	90.00	do	270.00	Fort Washington, Md.
Chase, David E.	Janitor	Aug. 1 to Oct. 31, 1884	40.00	do	120.00	Wood's Holl, Mass.
Chester, H. C.	General assistant	July 1, 1884, to Jan. 31, 1885	116.66	do	1,049.94	Do.

FISCAL YEAR 1884-'85 - Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Chester, H. C.	General assistant.	Feb. 1 to June 30, 1885.	\$125.00	Per month.	\$625.00	Wood's Holl, Mass.
Clark, Frank N.	Station superintendent.	July 1, 1884, to June 30, 1885.	183.33	do.	2,199.96	Michigan station.
Cleveland, D. H.	Cockswain of launch.	July 1 to Sept. 30, 1884.	70.00	do.	210.00	Wood's Holl, Mass.
Do.	do.	Oct. 1, 1884, to June 30, 1885.	70.00	do.	630.00	Havre de Grace, Md.
Collins, J. W.	Fishery expert.	July 1 to 7, 1884.	125.00	do.	28.23	Arrangement of collections.
Do.	do.	Jan. 1 to Mar. 31, 1885.	125.00	do.	375.00	Steamer <i>Albatross</i> .
Do.	do.	Apr. 1 to June 30, 1885.	125.00	do.	375.00	Special service.
Conway, W. L.	Laborer.	July 1, 1884, to June 30, 1885.	1.25	Per day.	456.25	Fish-ponds, Washington, D. C.
Corridon, James J.	Clerk.	Jan. 2 to June 30, 1885.	75.00	Per month.	447.58	Office of accounts.
Couture, Alex.	Penning fish.	Oct. 13 to 31, 1884.	3.00	Per day.	57.00	Alpena, Mich.
Do.	Spawntaker.	Nov. 1 to 30, 1884.	2.00	do.	59.00	Do.
Crawford, James.	Machinist.	Nov. 16, 1884, to Apr. 30, 1885.	45.00	Per month.	247.50	Northville, Mich.
Do.	Laborer.	June, 1885.	1.50	Per day.	26.25	Do.
Curtin, Thomas.	Watchman and laborer.	July 1, 1884, to June 30, 1885.	55.00	Per month.	660.00	Fish-ponds, Washington, D. C.
Dandridge, William E.	Car cook.	Nov. 1 to Dec. 31, 1884.	40.00	do.	80.00	Car No. 2.
Do.	do.	Jan. 1 to June 30, 1885.	45.00	do.	270.00	Do.
Davidson, E. Y.	Clerk.	July 1 to Dec. 31, 1884.	40.00	do.	240.00	Office records.
Do.	do.	Jan. 1 to June 30, 1885.	50.00	do.	300.00	Do.
Dean, H. D.	Fish culturist.	Nov. 1, 1884, to June 30, 1885.	40.00	do.	310.00	Northville, Mich.
Dickerson, William.	Laborer.	July 1, 1884, to June 30, 1885.	1.50	Per day.	517.50	Fish-ponds, Washington, D. C.
Donnelly, F. L.	Distribution messenger.	Nov. 5 to Dec. 31, 1884.	2.50	do.	142.50	Distribution of fish.
Do.	do.	Jan. 1 to Feb. 28, 1885.	90.00	Per month.	180.00	Do.
Do.	do.	Apr. 27 to June 30, 1885.	90.00	do.	192.00	Do.
Downing, S. W.	Foreman spawntaker.	Oct. 3 to Dec. 4, 1884.	3.00	Per day.	189.00	Michigan station.
Do.	Collector of statistics.	Dec. 21, 1884, to Jan. 14, 1885.	2.00	do.	38.00	Lake Erie fisheries.
Do.	Spawntaker.	May 25 to June 10, 1885.	2.00	do.	34.00	Shad, Delaware River.
Dunnington, W. A.	Apprentice distribution messenger.	Nov. 1 to Dec. 31, 1884.	1.50	do.	91.51	Car No. 2.
Do.	Assistant distribution messenger.	Jan. 1 to June 30, 1885.	75.00	Per month.	450.00	Do.
Edwards, Vinal N.	Collector.	July 1, 1884, to June 30, 1885.	60.00	do.	720.00	Wood's Holl, Mass.
Ellis, J. F.	Chief distribution messenger.	July, Sept. 16 to Dec. 31, 1884.	3.50	Per day.	483.60	Distribution of fish.
Do.	do.	Jan. 1 to June 30, 1885.	100.00	Per month.	600.00	Do.
Ferguson, T. B.	Chief assistant to Commissioner.	July 1, 1884, to June 30, 1885.	5,000.00	Per year.	5,000.00	Fish-ponds, Washington, D. C.
Foulkes, George.	Laborer.	July 1 to Aug. 31, 1884; and Jan. 1 to 15, 1885.	1.25	Per day.	66.57	Do.
Do.	do.	Sept. 1 to Dec. 31, 1884; Jan. 16 to June 30, 1885.	1.50	do.	353.63	Do.
Fox, J. C.	Spawntaker.	Oct. 16, 1884, to May 24, 1885.	45.00	Per month.	328.84	Alpena, Mich.
Do.	do.	May 25 to June 10, 1885.	45.00	do.	25.16	Shad, Delaware River.
Gilbert, Charles H.	Naturalist.	July, Sept. 1 to Nov. 16, 1884.	50.00	do.	176.66	Fisheries, Mississippi valley.

[illegible]

FISCAL YEAR 1884-'85—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Jones, George A.	Assistant distribution messenger.	June, 1885.	\$55.00	Per month.	\$55.00	Car No. 2.
Joyce, Sarah.	Temperature observer.	June 20 to 30, 1885.	5.00	do	1.83	Fort Washington, Md.
Keenan, James	Watchman of barges.	July 1 to 3, 1884.	45.00	do	4.35	Havre de Grace, Md.
Do.	Spawn-taker.	Mar. 23 to June 13, 1885.	45.00	do	124.50	Do.
Do.	Laborer.	June 14 to 30, 1885.	35.00	do	19.83	Do.
Kenly, D. W.	Expert fish culturist.	July and Sept., 1884.	55.00	do	110.00	St. Jerome's, Md.
Do.	do	Aug., 1884.	45.00	do	45.00	Do.
Do.	do	Oct. 1, 1884, to June 30, 1885.	60.00	do	540.00	Havre de Grace, Md.
Kidder, J. H.	Chemist.	July 1, 1884, to June 30, 1885.	100.00	do	1,200.00	Methods of preserving fish bait.
Kite, J. A.	Assistant.	July 1, 1884, to Apr. 30, 1885.	100.00	do	1,000.00	Steamer <i>Fish Hawk</i> .
Koons, B. F.	do	Aug. 4 to Sept. 5, 1884.	2.00	Per day.	66.00	Investigations, Wood's Holl, Mass.
Lammond, R. Ellis.	Clerk.	May 21 to June 30, 1885.	30.00	Per month.	40.64	Division of distribution.
Latimer, Clarence E.	do	July 1, 1884, to June 30, 1885.	50.00	do	600.00	Office of records.
Lea, W. L.	Apprentice distribution messenger.	May 22 to June 30, 1885.	45.00	do	59.52	Car No. 1.
Lee, James A.	Cook.	July, 1884.	30.00	do	30.00	St. Jerome's, Md.
Lee, Leslie A.	Assistant.	July 28 to Sept. 13, 1884.	2.00	Per day.	96.00	Investigations, Wood's Holl, Mass.
Leech, James Y.	Apprentice distribution messenger.	Feb. 1 to June 30, 1885.	45.00	Per month.	225.00	Car No. 3.
Leonard, Timothy	Watchman and laborer.	July 1, 1884, to June 30, 1885.	40.00	do	480.00	Central Station, distribution.
Lewis, W. T.	Apprentice distribution messenger.	May 5 to June 30, 1885.	45.00	do	84.20	Car No. 1.
Lincoln, Anne C.	Clerk.	Dec. 16, 1884, to June 30, 1885.	50.00	do	325.00	Property office.
Linton, Edward.	Assistant.	July 26 to Sept. 12, 1884.	2.00	Per day.	98.00	Investigations, Wood's Holl.
Lofly, Frank L.	Office messenger.	Nov. 2, 1884, to June 30, 1885.	20.00	Per month.	159.33	Office, Chief Assistant.
Luckett, John F.	Expert fish culturist.	July 1 to Sept. 3, 1884.	55.00	do	115.50	St. Jerome's, Md.
Do.	Net mender.	Jan. 17 to Feb. 7, 1885.	2.00	Per day.	38.00	Fort Washington, Md.
Do.	Spawn-taker.	Feb. 8 to June 30, 1885.	60.00	Per month.	284.95	Do.
Lynch, Richard.	In charge arsenal ponds.	July 1, 1884, to June 30, 1885.	15.00	do	180.00	Washington, D. C.
McCaffey, Charles.	Laborer.	Mar. 16 to May 6, 1885.	1.25	Per day.	39.36	Fish-ponds, Washington, D. C.
McCarthy, John.	do	Mar. 1 to June 30, 1885.	1.25	do	112.50	Do.
McDonald, M.	Chief Division of Distribution.	July 1, 1884, to June 30, 1885.	200.00	Per month.	2,400.00	General office.
Mackall, D. B.	Clerk.	Nov. 11 to Dec. 31, 1884.	40.00	do	65.81	Office of accounts.
Do.	Apprentice distribution messenger.	Jan. 1 to June 30, 1885.	45.00	do	270.00	Car No. 2.
Marbury, Ella M.	Clerk.	July 1 to Oct. 31, 1884.	75.00	do	300.00	Office of accounts.
Do.	do	Nov. 1, 1884, to June 30, 1885.	75.00	do	600.00	Property Office.
Martin, S. J.	Watchman and collector of statistics.	July 1, 1884, to June 30, 1885.	50.00	do	600.00	Gloucester, Mass.
Mather, Fred.	General assistant.	Jan. 1 to June 30, 1885.	500.00	Per annum.	250.00	Cold Spring Harbor, N. Y.
Maynard, William.	Spawn-taker.	Apr. 25 to June 26, 1885.	50.00	Per month.	103.33	Fort Washington, Md.
Moore, George H. H.	Distribution messenger.	July 1 to Sept. 30, 1884.	3.00	Per day.	159.00	Car No. 1 and detached.

Moore, George H. H.	Captain of car	Oct. 1 to Dec. 31, 1884	3.00	Per day	276.00	Car No. 2
Do	do	Jan. 1 to June 30, 1885	100.00	Per month	600.00	Do.
Morgan, W. H.	Laborer	July 1, 1884, to June 30, 1885	40.00	do	480.00	Central Station and distribution.
Munson, W. H.	Fish culturist	Sept. 1, 1884, to Feb. 28, 1885	1.75	Per day	278.25	Maine stations.
Do	Night attendant	Sept. 15 to Oct. 31, 1884	.25	Per night	10.75	Do.
Murphy, W. W. J.	Clerk	July 1, 1884, to June 30, 1885	100.00	Per month	1,200.00	Office of accounts
Neenan, Patrick	Laborer	July 7 to Aug. 2, 1884	2.00	Per day	30.40	Wood's Holl, Mass.
Neff, Louis	do	Apr. 1 to June 30, 1885	1.50	do	112.13	Fish-ponds, Washington, D. C.
O'Connor, J. J.	Clerk	July 1, 1884, to Mar. 31, 1885	100.00	Per month	1,100.00	May 1, to June 30, office division of distribution.
Do	do	Apr. 1, 1885	118.50	do	118.50	Office of distribution.
Oliver, David	Cook	Nov. 6 to 17, 1884	1.00	Per day	12.00	Car No. 3.
Page, William F.	Clerk	Sept. 1 to Dec. 31, 1884	100.00	Per month	400.00	Division of distribution.
Do	Station superintendent	July and Aug., 1884; Jan. 1 to June 30, 1885	100.00	do	800.00	Central station, Washington, D. C.
Palmer, Joseph	Modeler	Apr. 1 to June 30, 1885	125.00	do	375.00	Modelling fish casts.
Palmer, William	do	July 1 to 7, 1884; Jan. 1 to June 30, 1885	65.00	do	404.68	Do.
Parker, H. P.	Copyist	July 1, 1884, to June 30, 1885	25.00	do	300.00	Office of records.
Parker, Peter, Jr.	Assistant	July 1, 1884, to June 30, 1885	75.00	do	900.00	Arrangement of collections.
Parker, Samuel	Laborer	July to Aug. 31, 1884, and Apr. 1 to June 30, 1885	1.25	Per day	107.80	Fish-ponds, Washington, D. C.
Perry, Mary	Laundress	July 1 to Oct. 31, 1884, and June 11 to 30, 1885	20.00	Per month	93.33	Wood's Holl, Mass.
Proctor, Henry	Laborer	July 1, 1884, to June 30, 1885	1.50	Per day	496.50	Fish-ponds, Washington, D. C.
Radcliff, Robert	do	July 1, 1884, to Apr. 30, 1885	30.00	Per month	300.00	Baird, Cal.
Rathbun, Richard	Assistant	July 1, 1884, to June 30, 1885	2,000.00	Per annum	2,000.00	Scientific inquiry.
Ravenel, W. de C.	Station superintendent	July 1 to Dec. 31, 1884	75.00	Per month	450.00	St. Jerome's, Md.
Do	do	Jan. 1 to June 30, 1885	100.00	do	600.00	Do.
Robinson, E. M.	Spawntaker	Apr. 22 to June 30, 1885	55.00	do	126.50	Fort Washington, Md.
Robinson, Mary	Janitrix of offices	July 1, 1884, to June 30, 1885	15.00	do	180.00	Central offices.
Robinson, Washington	Janitor of offices	July 1, 1884, to June 30, 1885	45.00	do	540.00	Do.
Rockwell, Julia L.	Clerk	July 1, 1884, to June 30, 1885	70.00	do	770.00	Office of records.
Rooney, Francis	Laborer	July 7 to Sept. 22, 1884	2.00	Per day	101.60	Wood's Holl, Mass.
Root, A. W.	Carpenter and fish culturist	Oct. 1, 1884, to Apr. 30, 1885	60.00	Per month	420.00	Northville, Mich.
Root, M. S.	Fish culturist	July 1, 1884, to June 30, 1885	60.00	do	720.00	Do.
Ryder, John A.	Assistant	July 1, 1884, to Jan. 30, 1885	125.00	do	1,500.00	Biological research.
Sanerhoff, William P.	Expert fish culturist	July 1, 1884, to Jan. 30, 1885; Feb. 16 to June 30, 1885	75.00	Per month	1,859.82	Harve de Grace, Md., steamer Lookout.
Do	do	Feb. 1 to 15, 1885	80.00	do	42.86	Do
Seudder, Charles W.	Clerk	July 1, 1884, to June 30, 1885	1,000.00	Per annum	1,000.00	Office of records.
Seagle, George A.	Station superintendent	July 1 to Dec. 31, 1884	50.00	Per month	300.00	Wytheville, Va.
Do	do	Jan. 1 to June 30, 1885	75.00	do	450.00	Do.
Simmons, Newton	Distribution messenger	Nov. 5 to Dec. 31, 1884	2.50	Per day	142.50	Car No. 1.
Do	do	Jan. 1 to June 30, 1885	90.00	Per month	540.00	Do.
Slack, Robert H.	Assistant	July 1, 1884, to June 30, 1885	75.00	do	900.00	Wood's Holl, Mass.
Slaght, Isaac	Fish culturist	Sept. 1, 1884, to May 16, 1885	50.00	do	425.00	Northville, Mich.
Smallwood, William	Laborer	Nov. 1 to 15, 1884, and Mar. 1 to May 15, 1885	1.25	Per day	54.68	Fish-ponds, Washington, D. C.
Smiley, Charles W.	Chief of division	July 1, 1884, to June 30, 1885	2,000.00	Per annum	2,000.00	Office of records.
Smiley, Robert W.	Typewriter and messenger	July 5 to Sept. 6, 1884	25.00	Per month	51.67	Do.

FISCAL YEAR 1884-'85—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Smillie, T. W.	Photographer	July 1 to 7, 1884, and May 1 to June 30, 1885.	\$150.00	Per month	\$333.87	Washington, D. C.
Smith, John	Cook	Nov. 18 to Dec. 31, 1884	30.00	do	43.00	Car No. 3.
Do	do	Jan. 1 to June 30, 1885	45.00	do	270.00	Do.
Smith, Sanderson	Assistant	July 17 to Dec. 13, 1884	125.00	do	612.90	Inquiry, arrangement of collections.
Do	do	June 16 to 30, 1885	125.00	do	62.50	Steamer Albatross.
Smith, Sidney I.	do	July 29 to Oct. 16, 1884	125.00	do	324.60	Inquiry, Wood's Holl, Mass.
Snell, Merwin P.	Clerk	July 1 to Nov. 30, 1884	50.00	do	250.00	Fisheries statistics.
Stevens, C. L.	Apprentice distribution messenger.	May 18 to June 30, 1885	45.00	do	65.32	
Stoerzer, Albert J.	Office messenger	Feb. 13 to June 30, 1885	20.00	do	91.43	Office of records.
Stone, Livingston	Station superintendent	July 1, 1884, to May 31, 1885	1,000.00	Per annum	916.63	California stations.
Taylor, Randolph	Cook	Aug. 1 to Oct. 31, 1884	30.00	Per month	360.00	St. Jerome's, Md.
Do	do	May 1 to June 30, 1885	1.50	Per day	27.27	Do.
Thomas, John	Laborer	Jan. 16 to May 15, 1885	1.25	do	68.43	Fish-ponds, Washington, D. C.
Thomas, Logan	do	Aug. 1, 1884, to June 30, 1885	45.00	Per month	495.00	Do.
Tillman, Charles	do	July 1, 1884, to May 15, 1885	1.25	Per day	185.00	Do.
Timbers, Robert	Laborer	July 1, 1884, to June 30, 1885	45.00	Per month	540.00	Central station, Washington, D. C.
Todd, H. L.	Draughtsman	do	1,600.00	Per annum	1,600.00	Drawings of fishes.
Tolbert, George H.	Expert fish culturist	do	65.00	Per month	780.00	St. Jerome's and Havre de Grace, Md.
Townsend, Charles H.	General assistant	do	60.00	do	720.00	Employed in the field.
Traylor, James G.	Clerk	do	75.00	do	900.00	Office chief assistant.
Tulian, E. A.	Spawn-taker	Oct. 23 to Nov. 30, 1884	2.00	Per day	76.00	Lake Michigan.
Do	Laborer	Dec. 1 to 15, 1884	1.50	do	22.50	Alpena, Mich.
Do	Distribution messenger	May 1 to 25, 1885	2.00	do	50.00	
Tune, M. N.	do	Nov. 6 to Dec. 31, 1884	30.00	Per month	55.00	Car No. 3.
Do	do	Jan. 1 to June 30, 1885	45.00	do	186.00	Car No. 1.
Verrill, A. E.	Assistant	July 1, 1884, to June 30, 1885	125.00	do	1,500.00	Inquiry, arrangement of collections.
Vessels, Dola	Chambermaid	July 11 to 30, 1885	15.00	do	10.00	Wood's Holl, Mass.
Wainwright, P. W.	Night watchman	July 1 to Oct. 31, 1884	30.00	do	120.00	Do.
Walters, F. A.	Fish culturist	Jan. 1 to May 31, 1885	1.75	Per day	210.00	Cold Spring Harbor, N. Y.
Walton, Robert C.	Watchman and telephone attendant.	July 1, 1884, to June 30, 1885	10.00	Per month	120.00	Navy-Yard, Washington, D. C.
Warwick, Birt	Painter	Sept. 12 to 24, 1884	2.00	Per day	22.00	Alpena, Mich.
Do	Assistant	Oct. 1, 1884, to May 23, 1885	45.00	Per month	348.38	Do.
Watkins, Mary	Housekeeper	July 1 to Oct. 31, 1884; June 11 to 30, 1885.	15.00	do	70.00	Wood's Holl, Mass.
Watkins, Thomas	Steward	July 1, to Oct. 31, 1884	45.00	do	180.00	Do.
Do	Laborer	Nov. 1, 1884, to May 31, 1885	40.00	do	40.00	Washington, D. C.
Do	Steward	June, 1885	40.00	do	40.00	Wood's Holl, Mass.
Welsh, John J.	Laborer	July 7 to Oct. 9, 1884	2.00	Per day	154.40	Do.
West, James	Cook	Oct. 1 to Nov. 30, 1884	39.30	Per month	78.30	Havre de Grace, Md.

West, James E.	do	April 4 to May 27, 1885.	30.00	do	53.12	Do.
West, Major C.	Cook's assistant	do	15.00	do	26.56	Do.
Wilcox, George	Carpenter	Sept. 1884	65.00	do	65.00	Northville, Mich.
Do.	do	Oct. 23 to Nov. 22, 1884	2.25	Per day	48.38	Do.
Wilcox, W. A.	Statistical agent	Jan. 1 to June 30, 1885	50.00	Per month	300.00	Gloucester, Mass.
Williams, George W.	Laborer	July 7 to Oct. 18, 1884	2.00	Per day	170.00	Wood's Hall, Mass.
Do.	Machinist	Oct. 19, 1884, to June 30, 1885	60.00	Per month	505.16	Do.
Wilson, J. Paul	Chief division of mails	July 1 to Dec. 31, 1884	150.00	do	900.00	Central offices.
Do.	Chief division of property	Jan. 1 to June 30, 1885	2,000.00	Per annum	1,000.00	Do.
Wires, S. P.	Foreman of station	Sept. 1, 1884, to May 25, 1885	75.00	Per month	660.48	Alpena, Mich.
Do.	Fish culturist	May 26 to June 25, 1885	75.00	do	39.48	Shad, Delaware River.
Wolf, M. H.	Laborer	July 1 to 15, 1884	1.25	Per day	13.44	Fish-ponds, Washington, D. C.
Do.	do	Sept. 1 to Oct. 20, 1884	1.50	do	33.75	Do.
Do.	do	Oct. 21 to Nov. 30, 1884	1.25	do	38.44	Do.
Do.	do	Dec. 1 to 15, 1884	1.50	do	4.50	Do.
Do.	do	Jan. 1 to June 30, 1885	1.25	do	156.04	Do.
Young, Middleton	do	Nov. 1, 1884, to June 30, 1885	1.50	do	26.62	St. Jerome's, Md.
<i>Temporary employés.</i>						
Abbott, John	Seineman	Apr. 3 to May 27, 1885	20.00	Per month	36.08	Havre de Grace, Md.
Abbott, Joseph	do	Apr. 3 to May 11, 1885	20.00	do	25.75	Do.
Acheson, Frank	Laborer	July 7 to Aug. 2, 1884	2.00	Per day	16.00	Wood's Holl, Mass.
Adams, Louis A.	Cook	May 13 to 31, 1885	30.00	Per month	18.38	Havre de Grace, Md.
Abern, John M.	Laborer	May 1 to 12, 1885	.85	Per day	10.00	Fort Washington, Md.
Ames, I. H.	Spawn-taker	Nov. 13 to 19, 1884	2.00	do	14.00	Northville, Mich.
Angle-ton, William	Laborer	July 28 to Aug. 2, 1884	2.00	do	10.00	Wood's Holl, Mass.
Axtell, George	Spawn-taker	Nov. 11 to 22, 1884	2.50	do	30.00	Northville, Mich.
Axtell, William	do	do	2.50	do	30.00	Do.
Babbett, Walter H.	do	Mar. 31 to Apr. 28, 1885	2.50	do	68.75	Do.
Babbett, R. S. J.	do	Mar. 27 to Apr. 28, 1885	2.50	do	73.75	Do.
Babbitt, R. S., sr.	Spawn-taker	do	2.50	do	77.50	Do.
Bagley, Thomas	Laborer	July 7 to Aug. 12, 1884	2.00	do	54.00	Wood's Holl, Mass.
Bagley, J. A.	do	Oct. 29 to Nov. 24, 1884	1.50	do	34.50	Maine stations.
Barnes, Edwin	do	May 11 to June 30, 1885	1.50	do	28.12	St. Jerome's, Md.
Barnes, Nelson	do	do	1.50	do	29.62	Do.
Barnum, W. P.	Seineman	Apr. 3 to May 27, 1885	20.00	Per month	36.08	Havre de Grace, Md.
Bartles, George	do	Apr. 7 to May 27, 1885	18.00	do	30.06	Do.
Bartram, Joseph	Laborer	Oct. 2 to 8, 1884	1.50	Per day	9.00	Northville, Mich.
Baur, John P.	Spawn-taker	Apr. 1 to June 10, 1885	50.00	Per month	119.66	Fort Washington, Md.
Bearse, C. G.	Laborer	July 18 to Aug. 10, 1884	2.00	Per day	7.80	Fish-ponds, Washington, Md.
Bearss, H.	Spawn-taker	Nov. 10 to 26, 1884	2.50	do	41.25	Northville, Mich.
Bennett, Moses	Laborer	July, 1884; May 1 to 31, 1885	1.50	do	46.12	St. Jerome's, Md.
Bennie, "Indian"	do	July, 1884	1.00	do	31.00	Baird, Cal.
Bennil, Aubrey	do	May 11 to June 30, 1885	1.50	do	31.87	St. Jerome's, Md.
Bennil, Charles	do	July 1 to Aug. 31, 1884	1.50	do	31.25	Do.
Bennil, George	do	July 1 to 31, 1884; Mar. 27 to June 30, 1885	1.50	do	96.62	Do.
Berrie, Joseph	Carpenter	Nov. 17 to 29, 1884	2.00	do	24.00	Washington, D. C.
Billy, "Indian"	Laborer	July, 1884	1.00	do	31.00	Baird, Cal.
Biscoe, A. C.	do	Apr. 25 to May 31, 1885	40.00	Per month	48.00	Fort Washington, Md.
Liecoe, Priscilla	Cook	Nov. 1 to Dec. 31, 1884	.....	.....	45.00	St. Jerome's, Md.

FISCAL YEAR 1884-'85.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Temporary employes— Continued.						
Blair, Ella M.	Egg-picker	Nov. 17, 1884, to Jan. 31, 1885.	\$22.00	Per month	\$54.50	Northville, Mich.
Blizzard, J. H.	Laborer	Apr. 1 to June 4, 1885	1.00	Per day	21.25	Wytheville, Va.
Bob, Indian	do	July, 1884	1.00	do	21.00	Baird, Cal.
Bondville, Amos	Carpenter	Oct. 14 to 16, 1884	2.00	do	5.00	Alpena, Mich.
Bradfield, William	Seineman	Apr. 1 to May 27, 1885	25.00	Per month	42.42	Havre de Grace, Md.
Brady, Daniel	Laborer	July 7 to 26, 1884	2.00	Per day	3.00	Wood's Holl, Mass.
Brown, George W.	Carpenter	Oct. 31 to Nov. 13, 1884	3.00	do	36.00	Arrangement of collections
Buck, W. D.	Distributing fish	June 5 and 6, 1885	1.25	Per day	2.50	Maine stations.
Burns, Thomas	Seineman	Apr. 7 to May 27, 1885	1.00	do	51.00	Havre de Grace, Md.
Busching, Henry	Carpenter	June 1 to 3, 1885	3.00	do	9.00	Repairing car No. 3.
Busching, William C.	do	May 30, 1885	2.50	do	2.50	Central station.
Cahill, Stephen	Laborer	July 7 to 26, 1884	2.00	do	8.00	Wood's Holl, Mass.
Candle, A.	do	Apr. 21 to June 4, 1885	1.00	do	22.50	Wytheville, Va.
Candle, A. M.	do	Apr. 1 to 20, 1885	1.00	do	13.75	Do.
Cangney, J. P.	Spawn-taker	Nov. 7 to 29, 1884	2.50	do	57.50	Northville, Mich.
Cangney, William W	do	Nov. 10 to 26, 1884	2.50	do	42.50	Do.
Chapman, Elentherox	do	Nov. 19 to 22, 1884	2.00	do	8.00	Alpena, Mich.
Charlie, Indian	Laborer	June 1 to 2, 1885	1.00	do	2.00	Baird, Cal.
Chase, Charles	do	July 1 to 15, 1884	1.25	do	12.19	Fish-ponds, Washington, D. C.
Chase, Daniel	do	Apr. 17 to June 5, 1885	1.00	do	49.50	Fort Washington, Md.
Chilson, C. E	Spawn-taker	Nov. 9 to 20, 1884	2.50	do	27.50	Northville, Mich.
Ciscle, James	do	Apr. 25 to May 31, 1885	50.00	Per month	60.00	Fort Washington, Md.
Clapp, Luther F	Laborer	Mar. 17, 1885	1.50	Per day	1.50	Northville, Mich.
Clark, Charles	do	Oct. 13 to 16, 1884	2.00	do	7.00	Alpena, Mich.
Clark, George T	Spawn-taker	May 16 to June 13, 1885	55.00	Per month	52.21	Havre de Grace, Md.
Cleveland, Robert	Laborer	Apr. 1 to May 29, 1884	1.25	Per day	46.56	Fish-ponds, Washington, D. C.
Coffee, William	Seineman	Apr. 7 to May 27, 1885	18.00	Per month	30.06	Havre de Grace, Md.
Coleman, Fred	do	Apr. 24 to May 27, 1885	18.00	do	19.86	Do.
Conkerton, D. H	Carpenter	Feb. 25 and 26, 1885	3.00	Per day	6.00	Distribution service.
Connelly, Harry W	Seineman	Apr. 8 to 23, 1885	20.00	Per month	10.66	Havre de Grace, Md.
Conner, D. E	Cook	June 1 to 25, 1885	1.33½	Per day	33.33	Fort Washington, Md.
Conner, Edward	do	Apr. 1 to May 31, 1885	40.00	Per month	80.00	Do.
Do	do	Mar. 30 and 31, 1885	1.50	Per day	1.50	Do.
Conture, Peter	Spawn-taker	Nov. 23 to 25, 1884	2.00	do	5.00	Alpena, Mich.
Conway, Daniel J.	Laborer	July 27 to Aug. 12, 1884	1.25	Per day	5.00	Wood's Holl, Mass.
Cooper, J. E	Carpenter	Oct. 9 to 18, 1884	2.00	do	17.33	Northville, Mich.
Cooper, J. H	do	Mar. 12 to 17, 1885	3.00	do	18.00	Fort Washington, Md.
Coalett, C. E	Spawn-taker	Nov. 3, 1884	2.25	do	2.25	Alpena, Mich.
Corvin M. P	Laborer	Apr. 1 to June 4, 1885	1.00	do	44.25	Wytheville, Va.

Cotton, Eugene D.	do	July 7 to Aug. 2, 1884	2.00	do	32.00	Wood's Holl, Mass.
Craig, Jackson.	do	Mar. 16 to 18, 1885	2.50	do	7.50	Baird, Cal.
Crawford, J. E.	do	Aug. 4 to Nov. 14, 1884	1.50	do	79.50	Northville, Mich.
Croft, L.	Spawn-taker	Oct. 30 to Nov. 29, 1884	2.00	do	62.00	Alpena, Mich.
Cunningham, John	Laborer	July 28 to Aug. 2, 1884	2.00	do	10.00	Wood's Holl, Mass.
Curry, John D.	Seineman	Apr. 3 to May 27, 1885	20.00	Per month	36.08	Havre de Grace, Md.
Daley, Ross.	Messenger	Jan. 30 to Feb. 5, 1885	.75	Per day	5.25	Office chief assistant.
Daly, Patrick	Laborer	July 7 to Aug. 2, 1884	2.00	do	32.60	Wood's Holl, Mass.
Davis, James M.	do	Feb. 16 to 28, 1885	1.50	do	3.00	Fish-ponds, Washington, D. C.
Davis, William T.	Seineman	Apr. 10 to May 27, 1885	18.00	Per month	18.26	Havre de Grace, Md.
Day, John A.	Spawn-taker	Apr. 15 to May 31, 1885	45.00	do	79.00	Do.
Do.	do	June 1 to 13, 1885	55.00	do	23.83	Do.
Dean, E. A.	Laborer	July 14 to 26, 1884	1.50	Per day	18.00	Northville, Mich.
Dean, Shepherd.	do	May 20 to June 30, 1885	1.50	do	13.87	St. Jerome's, Md.
Dent, Henry	do	Apr. 17 to June 6, 1885	1.16	do	59.50	Fort Washington, Md.
Dick, Indian	do	Feb. 1 to 28, 1885	30.00	Per month	30.00	Baird, Cal.
Donoghue, Roger	do	July 17 to 26, 1884	2.00	Per day	18.10	Wood's Holl, Mass.
Donovan, Eugene	do	Oct. 23 to 31, 1884	1.50	do	10.50	Northville, Mich.
Dow, Thomas	do	Jan. 1 to 20, 1885	2.00	do	40.00	Baird, Cal.
Dowd, Richard	Spawn-taker	Nov. 8 to 21, 1884	2.00	do	28.00	Alpena, Mich.
Downer, Julia	Egg-picker	Nov. 17 to 30, 1884	.75	do	10.50	Northville, Mich.
Do.	do	Dec. 1, 1884, to Jan. 31, 1885	22.00	Per month	44.00	Do.
Doyel, Frank	Laborer	July, 1884	2.00	Per day	1.00	Wood's Holl, Mass.
Doyle, John	do	June 26 to 30, 1885	1.25	do	7.00	Do.
Driscoll, Cornelius	do	July 1 to 15, 1884	1.25	do	1.56	Fish-ponds, Washington, D. C.
Dubey, A.	Spawn-taker	Nov. 15 to 21, 1884	2.00	do	15.00	Northville, Mich.
Duff, James	Laborer	July 7 to Sept. 15, 1884	2.00	do	67.40	Wood's Holl, Mass.
Duff, John T.	do	July 7 to Aug. 17, 1884	2.00	do	78.80	Do.
Duly, A. A.	Machinist	Dec. 1 to 31, 1884	120.00	Per month	120.00	Fish-ponds, Washington, D. C.
Elliott, Lute	do	Nov. 12 and 13, 1884	2.50	Per day	5.00	Northville, Mich.
Elsmore, Urban H.	Laborer	Sept. 15 to 23, 1884	1.25	do	9.37	Maine stations.
Do.	do	Oct. 28 to Nov. 24, 1884	1.50	do	35.25	Do.
Fenton, Patrick	Seineman	July 28 to Aug. 2, 1884	2.00	do	10.60	Wood's Holl, Mass.
Finney, George	Laborer	Apr. 10 to May 27, 1885	18.00	Per month	28.26	Havre de Grace, Md.
Fisher, J. M.	do	Oct. 30 to Nov. 12, 1884	1.50	Per day	18.00	Preparation of collections.
Fisher, R. P.	Carpenter	Apr. 1 to June 4, 1885	1.75	do	36.31	Wytheville, Va.
Fitzgerald, Carl	Spawn-taker	Oct. 30 to Nov. 7, 1884	2.00	do	18.00	Alpena, Mich.
Fitzgerald, E. J.	Assistant	May 5 to June 20, 1885	45.00	Per month	69.19	Central station, Washington, D. C.
Fletcher, George G.	Spawn-taker	Apr. 16 to June 13, 1885	55.00	do	106.33	Havre de Grace, Md.
Flood, John	Laborer	July 1 to Sept. 30, 1884	1.25	Per day	69.38	Fish-ponds, Washington, D. C.
Forbes, James	do	Sept. 11 to 24, 1884	1.25	do	12.81	Maine stations.
Do.	Night watchman	Oct. 28 to Nov. 21, 1884	1.50	Per night	37.50	Do.
Forbes, S. A.	Assistant	Aug., 1884	100.00	Per month	100.00	Inquiry, Western Lakes.
Forsyth, John A.	Laborer	July 1 to 31, 1884	35.00	do	35.00	Havre de Grace, Md.
Do.	Spawn-taker	Apr. 15 to June 13, 1885	65.00	do	108.16	Do.
Fox, Frank	do	Nov. 7 to 22, 1884	2.50	Per day	40.00	Northville, Mich.
Fox, O. D.	do	Nov. 6 to 26, 1884	2.50	do	52.50	Do.
Furrer, Arnold	do	Nov. 10 to 26, 1884	2.50	do	41.25	Do.
Gallagher, Thomas E.	Messenger	July, 1884	20.00	Per month	20.00	Office chief assistant.
Goudreau, Louis	Spawn-taker	Nov. 14 and 15, 1884	1.50	Per day	3.00	Alpena, Mich.
Gant, Richard	Laborer	Oct. 29 to Nov. 15, 1884	1.50	do	23.25	Preparation of collections.
Gill, Thomas	Seineman	Apr. 10 to May 27, 1885	18.00	Per month	28.26	Havre de Grace, Md.

FISCAL YEAR 1884-'85—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Temporary employes—Continued.						
Gilman, Michael	Laborer	Apr. 1 to June 4, 1885	\$1.00	Per day	\$47.50	Wytheville, Va.
Glaplin, D. L.	Spawm-taker	Nov. 9 to 22, 1884	2.50	do	35.00	Northville, Mich.
Godrean, Arnable	do	Nov. 15 to 23, 1884	1.75	do	15.75	Alpena, Mich.
Goffin, Wm.	Laborer	Nov., 1884	2.00	do	1.00	Wood's Holl, Mass.
Gould, Frank	Seineman	Apr. 10 to May 27, 1885	18.00	Per month	28.26	Havre de Grace, Md.
Gray, John R.	Laborer	Mar. 30 and 31, 1885	1.50	Per day	3.00	Fort Washington, Md.
Do.	Spawm-taker	Apr. 1 to May 31, 1885	50.00	Per month	100.00	Do.
Do.	Laborer	June 1 to 6, 1885	1.66 ²	Per day	10.00	Do.
Do.	Machinist	June 10 to 30, 1885	55.00	Per month	38.50	Central station, Washington, D. C.
Green, John H.	Spawm-taker	Apr. 15 to 30, 1885	35.00	do	18.66	Havre de Grace, Md.
Greenlaw, Hunter T.	Laborer	Mar. 30 and 31, 1885	1.50	Per day	3.00	Fort Washington, Md.
Do.	Spawm-taker	Apr. 1 to May 31, 1885	55.00	Per month	110.00	Do.
Do.	Laborer	June 1 and 2, 1885	1.83 ¹	Per day	3.66	Do.
Grew, Henry M.	do	July 2 and 3, 1884	2.00	do	3.00	Wood's Holl, Mass.
Griffiths, Herbert	Cook's assistant	Mar. 30 to June 13, 1885	20.00	Per month	49.95	Havre de Grace, Md.
Do.	do	June 14 to 30, 1885	.66 ²	Per day	11.33	Do.
Grinnell, Oliver C.	Messenger	July 30 to Oct. 11, 1884	3.00	Per week	31.71	Wood's Holl, Mass.
Gronewell, John T.	Spawm-taker	Apr. 1 to 30, 1885	35.00	Per month	35.00	Havre de Grace, Md.
Haag, Charles	Seineman	Apr. 24 to May 27, 1885	20.00	do	22.08	Do.
Halloek, G. W.	Spawm-taker	Nov. 9 to 22, 1884	2.50	Per day	35.00	Northville, Mich.
Hamlen, Henry	do	Apr. 15 to June 13, 1885	55.00	Per month	108.16	Havre de Grace, Md.
Handlon, James	Spawm-taker	Nov. 10 to 26, 1884	2.50	Per day	41.25	Northville, Mich.
Handlon, John	do	do	2.50	do	41.25	Do.
Harmon, Frank S.	Assistant	Nov. 17 to 24, 1884	2.00	Per day	15.00	Northville, Mich.
Harmon, Samuel K.	Seineman	Apr. 3 to May 27, 1885	20.00	Per month	36.08	Havre de Grace, Md.
Harron, L. G.	Captain of seine	Apr. 16 to June 15, 1885	55.00	do	110.00	Fort Washington, Md.
Hart, Frank	Seineman	May 18 to 27, 1885	20.00	do	6.45	Havre de Grace, Md.
Hazlett, Hugh	do	Apr. 10 to May 27, 1885	18.00	do	28.26	Do.
Head, James	do	Apr. 8 to 23, 1885	20.00	do	10.66	Do.
Heaton, Charles	Spawm-taker	Nov. 7 to 22, 1884	2.50	Per day	40.00	Northville, Mich.
Heisley, J. M.	Carpenter	Dec. 1, 1884, to Jan. 31, 1885	3.00	do	159.00	Central Station, Washington, D. C.
Hemphill, Henry	Assistant	May 12 to June 12, 1885	105.00	Per month	105.00	Investigating Gulf fisheries.
Henderson, James A.	Laborer	July 2 to 29, 1884	1.50	Per day	33.00	Northville, Mich.
Herbert George R.	Machinist	May 14 to June 30, 1885	2.25	do	101.25	Central Station, Washington, D. C.
Hering, George	Spawm-taker	Nov. 9 to 22, 1884	2.50	do	35.00	Northville, Mich.
Higgins, A.	Laborer	June 2 to 10, 1885	1.00	do	8.50	Wood's Holl, Mass.
Hines, George	do	Sept. 27 to 30, 1884	1.00	do	2.00	Wytheville, Va.
Hopewell, Benedict	do	July 19, 1884, to June 30, 1885	1.50	do	151.87	St. Jerome's, Md.

Hopewell, Jefferson	do	Nov. 10 to 22, 1884	1.50	do	9.00	Do.
Do	do	May 1 to June 30, 1885	1.50	do	26.25	Do.
Hopewell, Logan	do	Nov. 10 to 22, 1884	1.50	do	6.00	Do.
Hosford, Charles J	Spawn-taker	Nov. 9 to 28, 1884	2.50	do	50.00	Northville, Mich.
Hunter, J. B	do	Oct. 30 to Nov. 28, 1884	2.00	do	60.00	Alpena, Mich.
Jack, Indian	Laborer	Aug. 18 to 26, 1884	1.00	do	9.00	Baird, Cal.
Jackson, H. F	do	July 14 to 26, 1884	1.50	do	18.00	Northville, Mich.
Jackson, W. W	Watchman	July 1 to Aug. 31, 1884	55.00	Per month	110.00	Fish-ponds, Washington, D. C.
James, H. H	Messenger	May 1 to June 11, 1885	45.00	do	61.50	Fort Washington, Md.
Do	Laborer	Apr. 25 to 30, 1885	1.50	Per day	9.00	Central station, Washington, D. C.
Jeff, Indian	do	Oct. 10 to 31, 1884	1.25	do	27.50	Baird, Cal.
Do	do	Nov. 1 to 25, 1884	1.00	do	25.00	Do.
Jenkins, William H., jr	Spawn-taker	May 16 to 21, 1885	55.00	Per month	10.64	Havre de Grace, Md.
Jim, Indian	Laborer	Aug. 1 to Sept. 25, 1884	1.75	Per day	78.75	Baird, Cal.
Jimmie, Indian	do	Nov. 1 to 10, 1884	1.00	do	10.00	Do.
Joe, Indian	do	May 1 to 10, 1885	1.00	do	10.00	Do.
John, James	do	Nov. 1 to 15, 1884	1.25	do	15.00	Fish-ponds, Washington, D. C.
Johnie, Indian	do	Nov. 1, 1884, to June 30, 1885	1.00	do	116.00	Baird, Cal.
Johnson, James H	do	Jan. 26 and 27, 1885	1.50	do	3.00	Offices, Washington, D. C.
Johnson, John	do	June 15 to 30, 1885	2.00	do	10.00	St. Jerome's, Md.
Johnson, Nelson	do	July 1 to Aug. 31, 1884	1.50	do	35.25	Do.
Do	do	Mar. 27 to June 30, 1885	1.50	do	29.87	Do.
Jones, James	do	Oct. 1 to Dec. 15, 1884	1.25	do	3.75	Fish-ponds, Washington, D. C.
Jones, James T	Spawn-taker	Apr. 15 to June 13, 1885	55.00	Per month	108.16	Havre de Grace, Md.
Jones, Warren	Laborer	July 1 to 15, 1884	1.25	Per day	13.44	Fish-ponds, Washington, D. C.
Junkin, J. H	do	Feb. 10 to 13, 1885	1.50	do	6.00	Northville, Mich.
Kaiser, B. L	do	Apr. 16 to 30, 1885	1.25	do	5.62	Fish-ponds, Washington, D. C.
Kane, Timothy	Coxswain	Oct. 1 to 26, 1884	30.00	Per month	32.97	Havre de Grace, Md.
Keen, Arthur	Laborer	May 19 to 22, 1885	2.00	Per day	7.00	Do.
Kells, Allen	do	Sept. 1 to 25, 1884	2.50	do	62.50	Baird, Cal.
Do	do	Oct. 1 to 31, 1884	75.00	Per month	75.00	Do.
Kennedy, Edward	Seineman	Apr. 7 to May 27, 1885	20.00	do	33.42	Havre de Grace, Md.
Knapp, Philip	Spawn-taker	Nov. 16 to 19, 1884	2.00	Per day	8.00	Alpena, Mich.
Koendres, John	Laborer	Apr. 8 to May 27, 1885	1.00	do	50.00	Havre de Grace, Md.
Kohler, Samuel W	do	Oct. 1 to Nov. 15, 1884; Mar. 16 to Apr. 15, 1885	1.25	do	23.76	Fish-ponds, Washington, D. C.
Larkin, Timothy	Spawn-taker	Apr. 15 to June 13, 1885	35.00	Per month	68.82	Havre de Grace, Md.
Leasley, James	do	Nov. 18 to 29, 1884	2.00	Per day	23.00	Alpena, Mich.
Lee, Frank	Laborer	May 1 to June 30, 1885	1.50	do	22.12	St. Jerome's, Md.
Lee, John	do	do	1.50	do	21.37	Do.
Lentz, Edward	Laborer	Apr. 7 to May 27, 1885	1.00	Per day	51.00	Havre de Grace, Md.
Lewellen, F. P	Carpenter	Apr. 1 to May 2, 1885	1.75	do	35.44	Wytheville, Va.
Lezette, I	do	Oct. 8 to 15, 1884	2.00	do	14.00	Northville, Mich.
Lizette, L	Spawn-taker	Nov. 15 to 26, 1884	2.00	do	24.00	Do.
Logan, Thomas	Watchman	July 1 to 31, 1884	45.00	Per month	45.00	Fish-ponds, Washington, D. C.
Lucas, Robert	Laborer	June 16 to 30, 1885	1.25	Per day	10.62	Do.
Lutz, Theo	Spawn-taker	Nov. 1 to 6, 1884	2.00	do	12.00	Alpena, Mich.
McAuliff, Daniel	Laborer	July 28 to Aug. 2, 1884	2.00	do	11.40	Wood's Holl, Mass.
McCafferty, Joseph A	Collecting statistics	May 16 to 20, 1885	2.00	do	8.00	Shad fisheries.
McCarthy, J.	Laborer	July 27 to Sept. 29, 1884	2.00	do	111.40	Wood's Holl, Mass.
McCarthy, Peter	do	May 18 to 27, 1885	20.00	Per month	6.45	Havre de Grace, Md.
McGarvey, Thomas	do	June 1 to 15, 1885	1.25	Per day	7.50	Fish-ponds, Washington, D. C.

FISCAL YEARS 1884-'85—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total.	Remarks.
			Pay.	Time.		
<i>Temporary employes—</i> Continued.						
McLennan, Malcolm	Spawn-taker	Nov. 18 to 28, 1884	\$2.00	Per day	\$22.00	Alpena, Mich.
McNaney, J. T.	Laborer	July 1 to 31, 1884	35.00	Per month	35.00	Havre de Grace, Md.
Do	Spawn-taker	Apr. 15 to June 13, 1885	55.00	do	108.16	Do.
McNitt, D. A.	do	Nov. 15 to 20, 1884	2.00	Per day	12.00	Northville, Mich.
McPherson, Peter O	do	Nov. 1 to 27, 1884	2.00	do	54.00	Alpena, Mich.
Mack, John	Laborer	Apr. 7 to May 27, 1885	1.00	do	51.00	Havre de Grace, Md.
Do	Spawn-taker	May 28 to June 13, 1885	1.00	do	17.00	Do.
Do	Laborer	June 14 to 30, 1885	35.00	Per month	19.83	Do.
Maley, John H.	do	July 7 to 26, 1884	2.00	Per day	5.00	Wood's Holl, Mass.
Mariner, Alphens	do	Apr. 3 to May 27, 1885	20.00	Per month	36.08	Havre de Grace, Md.
Mariner, Wm. H.	do	do	20.00	do	36.08	Do.
Marsh, Henry	Spawn-taker	Nov. 10 to 22, 1884	2.50	Per day	32.50	Northville, Mich.
Matthews, Geo. H	Laborer	Nov. 1 to 15, 1884	1.50	do	10.50	Fish-ponds, Washington, D. C.
Maxfield, Willis	Spawn-taker	Nov. 10 to 22, 1884	2.50	do	32.50	Northville, Mich.
Meek, Seth E.	Assistant	Nov. 1 to 30, 1884	2.00	do	24.00	Preparation of collections.
Meushaw, William H	Spawn-taker	Apr. 15 to June 13, 1885	35.00	Per month	68.82	Havre de Grace, Md.
Miller, Charles	Laborer	Apr. 16 to 30, 1885	1.25	Per day	10.00	Fish-ponds, Washington, D. C.
Do	do	May 1 to June 15, 1885	1.50	do	55.50	Do.
Miller, Edward	Watchman	Nov. 1 to 29, 1884	2.00	do	58.00	Alpena, Mich.
Miller, Robert H.	Mason	July, 1884	3.50	do	1.75	Wood's Holl, Mass.
Miller, William	Laborer	Oct. 13 to 18, 1884	2.00	do	12.00	Alpena, Mich.
Do	Spawn-taker	Oct. 19 to Nov. 28, 1884	2.00	do	82.00	Michigan stations.
Milligan, C. L.	Draughtsman	Nov. 19, 1884, to Jan. 1, 1885	10.00	Per week	60.00	Draughting office.
Do	do	Jan. 15 to Mar. 27, 1885	1.50	Per day	49.50	Do.
Do	do	May 1 to June 30, 1885	40	Per hour	110.00	Do.
Mitchell, E. S.	Spawn-taker	Apr. 15 to June 13, 1885	35.00	Per month	68.82	Havre de Grace, Md.
Do	Laborer	June 14 to 30, 1885	35.00	do	19.83	Do.
Molyneux, Harry	Spawn-taker	Nov. 18 and 19, 1884	2.00	Per day	4.00	Northville, Mich.
Moore, Daniel H.	Scullion	May 13 to 31, 1885	25.00	Per month	15.32	Fort Washington, Md.
Moore, George	Spawn-taker	Nov. 10 to 26, 1884	2.50	Per day	41.25	Northville, Mich.
Moore, William H	do	do	2.50	do	41.25	Do.
Motley, Charles	do	Oct. 30 to Nov. 28, 1884	2.00	do	60.00	Alpena, Mich.
Nash, James A.	do	Apr. 15 to June 13, 1885	35.00	Per month	68.82	Havre de Grace, Md.
Newby, Herman	Laborer	July 1 to 31, 1884	30.00	do	30.00	Do.
Nichols, Henry	Engineer	Apr. 1 to 30, 1885	45.00	do	45.00	Northville, Mich.
Norris, Hiram	Laborer	Sept. 1 to Nov. 15, 1884	1.25	Per day	42.50	Fish-ponds, Washington, D. C.
O'Donnell, Harry	Spawn-taker and assistant	Apr. 8 to May 13, 1885	55.00	Per month	65.23	Central Station, Washington, D. C.
Offenstein, John	Laborer	June 16 to 30, 1885	1.25	Per day	5.62	Fish-ponds, Washington, D. C.
O'Hearn, Daniel	Spawn-taker	Nov. 10 to 26, 1884	2.50	do	41.25	Northville, Mich.

Olmston, Young	Laborer	June 26 to 30, 1885	1.75	do	7.00	Wood's Holl, Mass.
Orr, Joseph	do	Apr. 10 to May 27, 1885	18.00	Per month	28.26	Havre de Grace, Md.
Palmer, Samuel	do	Apr. 16 to 30, 1885	1.25	Per day	15.94	Fish-ponds, Washington, D. C.
Partridge, Thomas	Tending hatching-house	Apr. 1 to May 31, 1885	12.50	Per month	25.00	Maine stations.
Pedrick, John C	Clerk	Dec. 8 to 31, 1884	50	Per hour	26.75	Office accounts.
Perage, F	Laborer	Aug. 4 to 28, 1884	1.50	Per day	31.50	Northville, Mich.
Persons, John D	Spawn-taker	Nov. 1 to 3, 1884	2.00	Per day	6.00	Alpena, Mich.
Platts, George	do	Nov. 1 to 28, 1884	2.00	do	56.00	Do.
Pontina, Louis	do	Nov. 12 to 21, 1884	2.00	do	19.00	Northville Mich.
Posey, J. A	do	May 11 to June 13, 1885	50.00	Per month	55.53	Havre de Grace, Md.
Do	Laborer	June 14 to 30, 1885	35.00	do	19.83	Do.
Pugsley, D	Spawn-taker	Nov. 19 to 27, 1884	2.00	Per day	18.00	Alpena, Mich.
Pursons, "Indian"	Laborer	Aug. 1 to 15, 1884	1.00	do	15.00	Baird, Cala.
Raynole, E. M	Clerk	Apr. 15 to 30, 1885	35.00	Per month	17.50	Northville, Mich.
Redmond, Moses	Laborer	June 16 to 30, 1885	1.25	Per day	5.62	Fish-ponds, Washington, D. C.
Reinbart, John	do	Apr. 3 to May 27, 1885	20.00	Per month	36.08	Havre de Grace, Md.
Reynolds, Thomas	do	July 7 to Aug. 25, 1884	2.00	Per day	71.60	Wood's Holl, Mass.
Rice, G. B.	Spawn-taker	Apr. 15 to June 13, 1885	55.00	Per month	108.16	Havre de Grace, Md.
Rice, Wm. P	Mason	July 7 to 26, 1884	3.50	Per day	40.60	Wood's Holl, Mass.
Ripley, C B	Laborer	Nov. 3 to 24, 1884	1.50	do	28.50	Maine stations.
Rouleau, E	Spawn-taker	Nov. 6 to 22, 1884	2.00	do	34.00	Alpena, Mich.
Schultz, C	do	Nov. 1 to 29, 1884	2.00	do	40.00	Do.
Scott, Nathan	Cook	Sept. 1 to 30, 1884	39.00	Per month	39.00	Havre de Grace, Md.
Seagle, James B	Carpenter	Apr. 1 to June 4, 1885	1.75	Per day	50.75	Wytheville, Va.
Seitz, M	Spawn-taker	Nov. 9 to 26, 1884	2.50	do	45.00	Northville, Mich.
Shea, Michael	Laborer	July 28 to Aug. 2, 1884	2.00	do	11.40	Wood's Holl, Mass.
Shepperson, W. J	Carpenter	Oct. 1 to Nov. 15, 1884	3.00	do	30.00	Fish-ponds, Washington, D. C.
Do	do	Dec. 27 to 30, 1884	3.00	do	7.50	Albatross.
Shorter, William	Laborer	Mar. 27 to June 30, 1885	1.50	do	6.00	St. Jerome's, Md.
Sifield, Rudolph	Spawn-taker	Nov. 6 to 27, 1884	2.50	do	55.00	Northville, Mich.
Simmons, H. A	do	Nov. 13 to 24, 1884	2.00	do	23.00	Do.
Smith, A. W	Clerk	Nov. 7, 1884, to June 4, 1885	.30	Per hour	46.19	Office of accounts.
Smith, Celine	Attending telephone	July 1 to Oct. 31, 1884	5.00	Per month	20.00	Wood's Holl, Mass.
Smith, Charles	Laborer	Apr. 3 to May 27, 1885	20.00	do	36.08	Havre de Grace, Md.
Smith, Joseph	do	Apr. 16 to May 27, 1885	18.00	do	24.66	Do.
Stewart, William	Assistant	Nov. 24 to Dec. 19, 1884	1.50	Per day	33.00	Northville, Mich.
Do	Night watchman	Apr. 13 to 24, 1885	1.50	do	18.00	Do.
Stone, John	Spawn-taker	Nov. 4 to 28, 1884	2.50	do	62.50	Do.
Stoner, George	do	Nov. 13 to 19, 1884	2.00	do	14.00	Do.
Stoots, W. S	Laborer	Jan. 1 to Feb. 28, 1885	.60	do	31.50	Cold Spring Harbor, N. Y.
Stricker, Charles	Making crates	Dec. 9 and 10, 1884	2.00	do	4.00	Central Station, Washington, D. C.
Sumwalt, John	Spawn-taker and laborer	Apr. 15 to June 30, 1885	35.00	Per month	88.65	Havre de Grace, Md.
Taylor F. E	Laborer	Oct. 23 to Nov. 24, 1884	1.25	Per day	35.00	Maine stations.
Teppish, John	Seine-mender	Apr. 1 to May 27, 1885	2.00	do	114.00	Havre de Grace, Md.
Thomas, James	Laborer	Aug. 4 to 28, 1884, and June 2 to 20, 1885	1.50	do	57.75	Northville, Mich.
Thompson, Everett P	Captain of seine	Shad season of 1885	300.00	do	300.00	Havre de Grace, Md.
Thompson, John G	Laborer	Apr. 1 to May 27, 1885	20.00	Per month	37.42	Do.
Thompson, Robert	Assistant	Nov. 1 to 30, 1884	2.00	Per day	60.00	Alpena, Mich.
Do	Watchman	May 2 to 23, 1885	1.50	do	33.00	Do.
Tindall, John	Spawn-taker	Nov. 23 to 28, 1884	2.00	do	12.00	Do.
Troden, James	do	Nov. 13 to 23, 1884	2.00	do	20.00	Do.

FISCAL YEARS 1884-'85—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Temporary employés— Continued.						
Trunnell, Francis.....	Laborer.....	Mar. 16 to 31, 1885.....	\$1.25	Per day.....	\$5.00	Fish-ponds, Washington, D. C.
Wagner, David H.....	Seine-mender.....	Apr. 1 to May 31, 1885.....	50.00	Per month.....	100.00	Fort Washington, Md.
Do.....	Laborer.....	Mar. 30 and 31, 1885.....	1.50	Per day.....	3.00	Do.
Do.....	do.....	June 1 to 10, 1885.....	1.66½	do.....	16.66	Do.
Wakeley, Thomas.....	Taking fish.....	Apr. 17 to 20, 1885.....	2.00	do.....	8.00	Northville, Mich.
Wallace, Charles.....	Spawn-taker.....	Apr. 27 to June 30, 1885.....	35.00	Per month.....	74.65	Havre de Grace, Md.
Ward, H. O.....	Carpenter.....	Jan. 5 to 10, 1885.....	2.00	Per day.....	12.00	Northville, Mich.
Welch, F. P.....	Spawn-taker.....	Nov. 10 to 22, 1884.....	2.50	do.....	32.50	Do.
Welsh, N. L.....	Laborer.....	Apr. 1 to June 4, 1885.....	1.25	do.....	54.06	Wytheville, Va.
West, Harry C.....	Spawn-taker.....	Nov. 10 to 26, 1884.....	2.50	do.....	42.50	Northville, Mich.
White, George.....	do.....	Apr. 2 to June 6, 1885.....	55.00	Per month.....	119.16	Fort Washington, Md.
Whitney, B. F.....	Watchman.....	Oct. 28 to Nov. 24, 1884.....	2.00	Per night.....	56.00	Northville, Mich.
Whitney, Frank.....	Spawn-taker.....	Nov. 15 to 20, 1884.....	2.00	Per day.....	12.00	Do.
Whitney, William.....	do.....	Nov. 15 to 22, 1884.....	2.00	do.....	15.00	Do.
Willetts, V.....	Carpenter.....	Oct. 13 to 16, 1884.....	2.00	do.....	7.50	Do.
Williams, Alex.....	Laborer.....	Mar., 1885.....	1.50	do.....	1.00	St. Jerome's, Md.
Willie, "Indian".....	do.....	Dec. 1 to 20, 1884.....	1.00	do.....	20.00	Baird, Cal.
Do.....	do.....	Jan. 1 to 18, 1885.....	2.00	do.....	36.00	Do.
Wilson, John.....	do.....	Apr. 2 to May 16, 1885.....	20.00	Per month.....	17.65	Havre de Grace, Md.
Wilson, John T.....	do.....	Apr. 10 to 30, 1885.....	18.00	do.....	12.60	Do.
Do.....	do.....	May 1 to 27, 1885.....	20.00	do.....	17.42	Do.
Winne, Charles L.....	Spawn-taker.....	Nov. 9 to 30, 1884.....	2.50	Per day.....	55.00	Northville, Mich.
Woodman, John.....	do.....	Nov. 10 to 26, 1884.....	2.50	do.....	41.25	Do.
					107,086.15	

FISCAL YEAR 1885-'86.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Acheson, Frank.....	Laborer.....	July 13 to Oct. 6, 1885.....	\$1.75	Per day.....	\$63.01	Wood's Holl, Mass.
Addison, A. C.....	Clerk.....	July 1, 1885, to June 30, 1886.....	100.00	Per month.....	1,200.00	Office of accounts.
Adams, W. H.....	Laborer.....	June, 1886.....	2.00	Per day.....	6.00	St. Jerome's, Md.
Alexander, A. B.....	Seaman.....	May 25 to June 30, 1886.....	45.00	Per month.....	55.16	Schooner <i>Grampus</i> .
Angel, F. I.....	Civil engineer.....	July 1 to Sept. 30, 1885.....	100.00	do.....	300.00	Wood's Holl, Mass.
Atkins, Charles G.....	Station superintendent.....	July 1, 1885, to June 30, 1886.....	150.00	do.....	1,800.00	Maine stations.
Axtell, George.....	Spawn-taker.....	Nov. 7 to 20, 1885.....	2.50	Per day.....	35.00	Northville, Mich.
Axtell, William.....	do.....	Nov. 11 to 18, 1885.....	2.50	do.....	20.00	Do.
Babbitt, R. S., sr.....	Assistant.....	June 11 to 16, 1886.....	2.50	do.....	15.00	Do.

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FISCAL YEAR 1885-'86.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Butman, S. J.	Spawn-taker	Nov. 7 to 17, 1885	\$2.50	Per day	\$27.50	Michigan stations.
Cain, J. F.	Clerk	Oct. 20 to Nov. 30, 1885	100.00	Per month	138.71	Office of accounts.
Campbell, Lawrence	Laborer	Mar., 1886	1.25	Per day	3.75	Fish-ponds, Washington, D. C.
Campbell, Duncan	Seaman	May 25 to June 30, 1886	45.00	Per month	55.16	Schooner <i>Grampus</i> .
Cangney, J. P.	Spawn-taker	Nov. 9 to 27, 1885	2.50	Per day	47.50	Northville, Mich.
Carlisle, George	Laborer	May, 1886	1.50	do	4.50	Maine stations.
Carroll, C. T.	Spawn-taker	Apr. 15 to May 22, 1886	55.00	Per month	69.67	Fort Washington, Md.
Carswell, James	Fish culturist	July 1 to Oct. 31, 1885	90.00	do	360.00	Gathering statistics.
Do.	do	Nov., 1885	90.00	do	90.00	Distributing carp.
Do.	do	Dec. 1, 1885, to Mar. 31, 1886	90.00	do	360.00	Wood's Holl, Mass.
Do.	do	Apr. 1 to May 31, 1886	90.00	do	180.00	Fort Washington, Md.
Do.	do	June, 1886	100.00	do	100.00	Gathering statistics.
Carter, Mary A.	Chambermaid	July 1 to Sept. 30, 1885	15.00	do	45.00	Wood's Holl, Mass.
Carter, Silas	Laborer	June, 1886	1.25	Per day	8.75	Fish-ponds, Washington, D. C.
Carter, Walton	do	do	1.25	do	17.50	Do.
Charlie, Indian	do	Aug., 1885, to Feb., 1886	1.00	do	26.00	Baird, Cal.
Do.	do	Dec., 1885	1.25	do	25.00	Do.
Chester, H. C.	Station superintendent	July 1, 1885, to June 30, 1886	125.00	Per month	1,500.00	Wood's Holl, Mass.
Clark, Frank N.	do	do	2,200.00	Per year	2,200.00	Michigan stations.
Clark, George T.	Spawn-taker	Mar. 15 to May 31, 1886	55.00	Per month	84.33	Havre de Grace, Md.
Cleaveland, D. H.	Coxswain of launch	July 1 to Nov. 30, 1885	70.00	do	350.00	Wood's Holl, Mass., and Havre de Grace, Md.
Cobey, F. W.	Spawn-taker	Mar., 1886	35.00	do	35.00	Havre de Grace, Md.
Do.	do	May 1 to 22, 1886	45.00	do	31.93	Do.
Collins, D. E.	First mate	May 17 to June 30, 1886	115.00	do	170.65	Schooner <i>Grampus</i> .
Collins, Henry	Spawn-taker	Nov. 1 to 17, 1885	2.00	Per day	34.00	Alpena, Mich.
Collins, J. W.	Fishery expert	July 1, 1885, to May 31, 1886	125.00	Per month	1,375.00	Schooner <i>Grampus</i> .
Do.	Captain	June, 1886	125.00	do	125.00	Havre de Grace, Md.
Coleman, Paul	Cook's help	May 18 to June 12, 1886	20.00	do	16.72	Fish-ponds, Washington, D. C.
Conway, W. L.	Laborer	July 1, 1885, to Jan. 31, 1886	1.25	Per day	262.80	Do.
Do.	do	Feb. 1886	1.50	do	42.00	Do.
Do.	do	Mar. 1 to June 30, 1886	45.00	Per month	180.00	Do.
Cook, Peter	do	Dec. 1885	1.50	Per day	5.00	Northville, Mich.
Cook, Vernon	do	Apr. 16 to June 30, 1886	1.25	do	68.43	Fish-ponds, Washington, D. C.
Coombs, J. M.	Second mate	May 26 to 31, 1886	75.00	Per month	14.52	Schooner <i>Grampus</i> .
Do.	Second officer	June 1 to 20, 1886	75.00	do	50.00	Do.
Cooper, John E.	Carpenter	Oct. 30 to Nov. 8, 1885	2.00	Per day	17.00	Michigan stations.
Corridon, J. J.	Clerk	July 1, 1885, to June 30, 1886	100.00	Per month	1,200.00	Office of accounts.
Corvin, M. P.	Laborer	Nov., 1885	1.00	Per day	9.00	Wytheville, Va.
Couture, Alex.	Spawn-taker	Oct. 31 to Nov. 27, 1885	2.00	do	56.00	Alpena, Mich.
Couture, Fred	Assistant at hatchery	Nov. 2 to Dec. 21, 1885	1.50	do	75.00	Do.
Cox, William E.	Clerk	Mar. 15 to June 30, 1886	40.00	Per month	141.94	Statistics.

Crawford, James.	Laborer.	Aug. 3 to Oct. 31, 1885; June 25 to 30, 1886.	1.50	Per day	44.25	Northville, Mich.
Do.	Engineer	Nov. 1, 1885, to Apr. 15, 1886.	50.00	Per month	275.00	Do.
Cullen, Charles	Spawn-taker	Nov. 9 to 18, 1885	2.50	Per day	25.00	Do.
Curtin, Thomas	Watchman and laborer	July 1, 1885, to June 30, 1886.	55.00	Per month	660.00	Fish-ponds, Washington, D. C.
Dana, Richard	Apprentice distribution messenger.	Oct. 19 to 31, 1885.	45.00	do	18.86	Car No. 3.
Do.	do	Nov. 1, 1885, to Jan. 31, 1886.	45.00	do	135.00	Car No. 3, carp distribution.
Do.	Assistant messenger	Mar. 15-31 to Apr. 30, 1886.	60.00	do	92.90	Car No. 3, whitefish distribution.
Do.	do	June 1 to June 7, 1886.	2.00	Per day	14.00	Do.
Do.	do	May, 1886.	60.00	Per month	60.00	Car No. 3, shad distribution.
Dandridge, W. E.	Laborer	July to Oct. 31, 1885.	45.00	do	180.00	Preparation of collections.
Davidson, E. Y.	Clerk	July 1 to Dec. 27, 1885.	55.00	do	312.90	Division of records.
David, George E.	Machinist	May 24 to June 30, 1886.	60.00	do	75.48	Wood's Holl, Mass.
Day, George E.	Spawn-taker	Apr. 19 to May 22, 1886.	55.00	do	61.03	Havre de Grace, Md.
Day, James	do	Mar. 29 to June 12, 1886.	45.00	do	112.35	Do.
Dean, E. A.	Watchman	Apr. 1 to 20, 1886.	45.00	do	30.00	Northville, Mich.
Dean, George B.	Assistant	Nov. 3 to Dec. 3, 1885.	2.00	Per day	62.00	Do.
Dean, H. D.	do	July 1 to Oct. 31, 1885.	40.00	Per month	160.00	Do.
Do.	do	Nov. 1, 1885, to June 30, 1886.	50.00	do	400.00	Do.
De Gray, Philip	Collecting eggs	Nov. 18 to Dec. 1 and Dec. 5 to 10, 1885.	2.00	Per day	40.00	Do.
De May, James	Taking spawn	Nov. 18 to 24, 1885.	2.50	do	10.00	Do.
Denny, David	Assistant to collect trout	June 15 and 16, 1886.	1.75	do	3.50	Do.
Desmond, John	Taking spawn	Nov. 9 to 25, 1885.	2.50	do	42.50	Do.
Dick, Indian	Laborer	Apr. 1 to 8, 1886.	1.25	do	10.00	McCloud River, California.
Do.	do	June 1 to 6, 1886.	1.00	do	6.00	Do.
Dickerson, William	do	July 1, 1885, to June 30, 1886.	1.50	do	503.60	Carp production.
Dinsmore, Scott	Apprentice	Apr. 19 to 30, 1886.	35.00	Per month	14.00	Havre de Grace, Md.
Do.	Spawn-taker	May 1 to 22, 1886.	45.00	do	31.93	Do.
Donnelly, F. L.	Messenger	Oct. 19, 1885, to Feb. 28, 1886.	90.00	do	397.73	Car No. 2, shad distribution.
Do.	do	Mar. 26 to June 7, 1886.	90.00	do	235.84	Do.
Donovan, James	Laborer	Aug. 15 to Oct. 3, 1885.	1.75	Per day	72.19	Wood's Holl, Mass.
Downer, Julia	Egg-picker	Nov. 1, 1885, to Jan. 31, 1886.	22.00	Per month	66.00	Northville, Mich.
Do.	do	Feb. 1 to 6, 8, 9, 1886.	.73	Per day	5.84	Do.
Do.	do	Mar. 4 to 6, 1886.	.75	do	1.88	Do.
Downing, S. W.	Foreman	Oct. 26 to Dec. 7, 1886.	3.00	do	129.00	Northville, Mich., collecting eggs.
Doyle, Frank	Apprentice	Apr. 19 to May 22.	35.00	Per month	38.83	Havre de Grace, Md.
Doyle, John	Laborer	Aug. 15 to 31, 1885.	1.75	Per day	9.63	Wood's Holl, Mass.
Duclo, John	Taking eggs	Nov. 10 to 19, 1885.	2.00	do	20.00	Northville, Mich.
Duly, A. A.	Engineer	May 1 to June 30, 1886.	120.00	Per month	240.00	Pumping out fish-ponds, Washington, D. C.
Dunnington, Wm. A.	Assistant messenger	Oct. 19 to June 15, 1886.	1.75	Per day	593.96	Car No. 2.
Dutcher, F. C.	Assistant trout collector	June 14 to 16, 1886.	2.00	do	6.00	Northville, Mich.
Earll, R. Edward	Assistant	Aug. 1, 1885 to June 30, 1886.	150.00	Per month	1,650.00	Gathering statistics of lake fisheries.
Eaton, Charles	Apprentice	Apr. 19, to May 22, 1886.	35.00	do	38.83	Havre de Grace, Md.
Edwards, Vinal N.	Watchman and collector	July 1, 1885, to June 30, 1886.	60.00	do	720.00	Wood's Holl, Mass.
Ellis, J. F.	Gathering statistics	July 1, 1885, to Sept. 30, 1885.	100.00	do	300.00	Northville, Mich.
Do.	Carp distribution	Oct. 1, 1885, to Feb. 28, 1886.	100.00	do	500.00	Car No. 3.
Do.	Whitefish distribution	March 1 to Apr. 30, 1886.	100.00	do	200.00	Do.
Do.	Shad distribution	May 1 to June 30, 1886.	100.00	do	200.00	Do.
Ellsmore, Urban H.	Laborer	Oct. 22 to 31; Nov. 2 to 19, 1885.	1.50	Per day	35.39	Maine stations.

FISCAL YEAR 1885-'86—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Ellmore, Urban H.	Laborer	Feb. 16 to 28, 1886	\$1.25	Per day	\$12.50	Maine stations.
Encell, George	Making floating boxes	Oct. 31 to Nov. 21, 1885	2.00	do	2.00	Alpena, Mich.
Ennes, H. L.	Collecting fish eggs	Nov. 8 to 20, 1885	2.50	do	32.50	Northville, Mich.
Espata, George F.	Apprentice spawn-taker	April 27 to May 22, 1886	35.00	Per month	29.50	Havre de Grace, Md.
Farren, Wm.	Laborer	Aug. 24 to 26, 1886	1.75	Per day	3.94	Wood's Holl, Mass.
Fennell, F. P.	Clerk	Jan. 1 to June 30, 1886	50.00	Per month	300.00	Carp distribution, office expense.
Ferguson, T. B.	Chief assistant	July 1, 1885, to June 30, 1886	5,000.00	Per year	5,000.00	Office expenses.
Fisher, E. E.	Laborer	May 3 to 7, 1886	1.25	Per day	7.12	Great Falls, Md.
Fitzgerald, Edward	do	Dec. 1 to 10, 1885; Apr. 22 to June 4, 1886	1.50	do	81.00	Central station.
Fitzhugh, J. T.	do	May 15 to June 17, 1886	1.50	do	7.50	Washington, D. C.
Fletcher, George G.	Spawn-taker	July 8 to Aug. 6, 1885	45.00	Per month	43.55	Propagation of Spanish mackerel, etc.
Do	do	Mar. 31 to Apr. 30, and June, 1886	55.00	do	111.77	Havre de Grace, Md.
Do	do	May 1 to 31, 1886	60.00	do	60.00	Do.
Floro, Jess.	Collecting eggs	Nov. 12 to 14, 1885	2.50	Per day	7.50	Northville, Mich.
Forbes, S. A.	Assistant	Aug. 29 to Sept. 8, 1885	5.00	do	52.50	Decrease of food-fishes of Great Lakes.
Forsythe, John A.	Spawn-taker	March 31 to May 22, 1886	55.00	Per month	95.80	Havre de Grace, Md.
Foskett, E. D.	Gathering statistics	March 5 to 9, 1886	2.00	Per day	6.00	Lorain, Ohio.
Foulkes, George	Laborer	July 1 to Dec. 31, 1885; Jan. 1 to Apr. 16, 1886	1.50	do	332.24	Carp production.
Fox, D. E.	Collecting eggs	Nov. 7 to 18, 1885	2.50	do	30.00	Northville, Mich.
Fox, Frank	do	Nov. 7 to 18, 1885	2.50	do	30.00	Do.
Fox, J. C.	Assistant	Sept. 26 to Dec. 31, 1885; Jan. 1 to Apr. 30, 1886	45.00	Per month	322.50	Do.
Do	do	May 24 to June 3, 1886; June 17 to 19	2.00	Per day	28.00	Do.
Do	do	June 7 to 23, 1886	1.50	do	18.00	Do.
Fox, O. D.	Collecting eggs	Nov. 5 to 23, 1885	2.50	do	47.50	Do.
Fox, Simon	do	Nov. 7 to 18, 1885	2.50	do	30.00	Do.
Foxwell, William C.	Laborer	June 11 to 30, 1886	1.50	do	13.50	St. Jerome's, Md.
Freece, George	do	June 1 to 30, 1886	1.25	do	19.05	Washington, D. C., carp production.
Furrer, Arnold	Taking spawn	Nov. 9 to 27, 1885	2.50	do	47.50	Northville, Mich.
Gage, Ida	Egg-picker	Nov. 1, 1885, to Jan. 31, 1886	22.00	Per month	66.00	Do.
Do	do	Feb. 1 to 9, 1886	.73	Per day	5.84	Do.
Do	do	March 6, 7, 1886	.75	do	1.12	Do.
Galligan, James	Laborer	June 21 to 24, 1886	1.75	do	7.00	Wood's Holl, Mass.
Garman, W. H.	Assistant	Aug. 29 to Sept. 7, 1885	5.00	do	50.00	Decrease of food-fishes of Great Lakes.
Gill, Herbert A.	Chief division of accounts	July 1, 1885, to June 30, 1886	2,200.00	Per year	2,200.00	Disbursing agent.
Gillis, Frank R.	Copyist	Jan. 20 to June 30, 1886	25.00	Per month	134.68	Division of records.
Gilmore, J. M.	Spawn-taker	Nov. 7 to 17, 1885	2.50	Per day	27.50	North Bass, Ohio.
Girvin, Samuel	do	Oct. 31 to Dec. 16, 1886	2.00	do	66.00	Northville, Mich.
Goffin, Edmond	Laborer	Aug. 14, 1885	1.75	do	1.75	Wood's Holl, Mass.

Goldsmith, Jas. S.	Clerk	July 1, 1885 to June 30, 1886	60.00	Per month	720.00	Division of distribution and shad production, Potomac River.
Goldsmith, Z. H.	Watchman	July 1, 1885, to June 30, 1886	70.00	do	840.00	Carp production, Washington, D. C.
Gondreau, A. M.	Spawn-taker	Nov. 15 to Dec. 1, 1885	2.00	Per day	34.00	Alpena, Mich.
Gondreau, Louis	Spawn-taker	Nov. 22 to Dec. 10, 1885	2.00	Per day	32.00	Northville, Mich.
Gorham, C. E.	Engineer and draughtsman	July 1, 1885, to June 30, 1886	150.00	Per month	1,800.00	Engineer's office.
Grabill, L. R.	Superintendent	Dec. 1, 1885, to June 30, 1886	100.00	do	700.00	Havre de Grace, Md.
Graham, Wm. H.	Assistant cook	Nov. 3 to Dec. 3, 1885	35.00	do	35.00	Do.
Gray, John R.	Machinist	July 1 to July 3, 1885	55.00	do	5.32	Central station.
Gray, Samuel	Carpenter	July 1 to Aug. 19, 1885	3.00	Per day	123.00	Carp production.
Do.	Laborer	Jan. 16 to Feb. 15, 1886	1.50	do	19.50	Do.
Green, E. W.	Janitor	Oct. 28 to Nov. 17, 1885	1.50	do	22.50	Central office.
Green, John W.	App. Dist. mess.	May 1 to June 15, 1886	45.00	Per month	73.50	Shad distribution.
Green, Loren W.	Superintendent	July 1 to Dec. 31, 1885; Jan. 1 to June 30, 1886	120.00	do	1,440.00	California trout.
Green, Reuben G.	Laborer	July 1 to Dec. 31, 1885	55.00	do	330.00	Do.
Do.	do	Jan. 1 to June 30, 1886	65.00	do	390.00	Do.
Green, Richard	do	Aug. 1 to 16, 1885	1.25	Per day	6.25	Carp production.
Greenlaw, N. S.	Spawn-taker	Apr., 1886	40.00	Per month	40.00	Fort Washington, Md.
Do.	do	May 1 to 24, 1886	1.33 $\frac{1}{3}$	Per day	32.00	Do.
Greenlaw, H. T.	do	Mar. 29 to 31, 1886	1.83 $\frac{1}{3}$	do	5.50	Do.
Do.	do	Apr. 1 to May 31, 1886	55.00	Per month	110.00	Do.
Griffin, R. B.	Laborer	July 1 to Dec. 15, 1885	1.50	Per day	167.60	Carp production.
Griffiths, George I.	Cook	July 1, 1885 to June 30, 1886	39.30	Per month	469.50	Havre de Grace, Md.
Griffiths, Herbert	Cook's assistant	July 1 to 3, 1885	.65	Per day	1.95	Do.
Grinnell, Oliver C.	Messenger	July 11 to Oct. 5, 1885	3.00	Per week	37.29	Wood's Holl, Mass.
Grob, Samuel	Spawn-taker	Nov. 2 to 27, 1885	2.00	Per day	52.00	Michigan stations.
Do.	do	Dec. 1 to 27, 1885	4.00	Per week	14.42	Do.
Do.	Papering office, etc.	June 7 to 10, 1886	2.50	Per day	10.00	Alpena, Mich.
Guthrie, Carrie	Egg-picker	Nov. 16 to 30, 1885	22.00	Per month	11.00	Northville, Mich.
Hallock, George W.	Spawn-taker	Nov. 8 to 21, 1885	2.50	Per day	35.00	Do.
Hamilton Wallace	Laborer	Sept. 1 to 15, 1885	1.25	do	9.69	Carp production.
Hamlen, Henry	Spawn-taker	Apr. 19 to May 22, 1886	55.00	Per month	61.03	Havre de Grace, Md.
Hamlen, William	Fish culturist and foreman	July 1 to Dec. 31, 1885; Jan. 1 to June 30, 1886	1,000.00	Per year	1,000.00	Do.
Hancock, J. A.	Laborer	Apr. 19 to 28; May 8 to 14, 1886	1.00	Per day	14.00	Wytheville, Va.
Hancock, W. K.	Messenger	July 1 to Dec. 31, 1885; Jan. 1 to June 30, 1886	20.00	Per month	240.00	Do.
Handlon, John C.	Spawn-taker	Nov. 9 to 27, 1885	2.50	Per day	47.50	Northville, Mich.
Harding, E. J.	Repairing office, etc.	June 9 to 10, 1886	2.50	do	3.75	Alpena, Mich.
Hare, S. J.	Night janitor	July 1 to Dec. 31, 1885; Jan. 1 to June 30, 1886	50.00	Per month	600.00	General offices.
Harmon, Frank S.	Laborer	June 14 to 16, 1886	1.50	Per day	4.50	Northville, Mich.
Harmon, I. A.	do	Jan. 16 to June 30, 1886	1.50	do	191.23	Carp production, Wash.
Harriman, E. A.	do	Apr. 20 to 21, 1886	2.50	do	3.75	Orland, Me.
Do.	do	May 15 to June 30, 1886	1.25	do	56.25	Do.
Harriman, H. C.	do	Apr. 21, 1886	1.25	do	1.25	Do.
Harriman, I. P.	do	Oct. 1, 1885, to Feb. 26, 1886	45.00	Per month	225.00	Do.
Do.	do	Mar. 1 to 31, 1886	45.00	do	40.64	Maine Salmon Works.
Do.	do	Apr. 1 to June 30, 1886	45.00	do	68.37	Orland, Me.
Harris, Edward	Cook	Oct. 19, 1885, to June 15, 1886	45.00	do	356.37	Car No. 2.

FISCAL YEAR 1885-'86—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Harris, Gwynne	Temperature observer	July 1, 1885, to June 30, 1886	\$15.00	Per month	\$180.00	Potomac River.
Harron, L. G.	Shad production	Mar. 25 to 31, 1886	2.00	Per day	14.00	Fort Washington, Md.
Do	Captain of seine	Apr. 1 to May 31, 1886	60.00	Per month	120.00	Do.
Hayes, Edward	Stenographer	July 1, 1885, to June 30, 1886	150.00	Per month	1,800.00	Commissioners' office.
Heaton, C.	Spawn-taker	Nov. 6 to 18, 1885	2.50	Per day	32.50	Northville, Mich.
Henderson, W. A.	Planting fish	May 4 and 6	2.00	do	4.00	Alpena, Mich.
Herdman, Charles M.	Fireman launch	Apr. 14 to May 31, 1886	50.00	Per month	78.34	Fort Washington, Md.
Do	Fireman	June, 1886	60.00	do	60.00	Launch <i>Lille</i> , Chesapeake Bay.
Hering, George	Spawn-taker	Nov. 6 to 18, 1885	2.50	Per day	32.50	Northville, Mich.
Hering, Len	do	do	2.50	do	32.50	Do.
Hessel, Rudolph	Superintendent carp-ponds	July 1, 1885, to June 30, 1886	150.00	Per month	1,800.00	Carp-ponds, Washington, D. C.
Hickey, Jerry	Laborer	Oct. 19 to Dec. 15, 1885	1.50	Per day	37.50	Fish-ponds, Washington, D. C.
Hickling, Thomas	Computing catch of fish	Oct. 15, 1885	2.50	do	1.25	Sandusky, Ohio.
Hill, William, jr.	Laborer	May 31 to June 11, 1886	1.75	do	18.37	Wood's Holl, Mass.
Hollingsworth, W. J.	Spawn-taker	Nov. 1 to 19, 1885	2.00	do	38.00	Alpena, Mich.
Hopewell, Benedict	do	Apr. 28 to May 22, 1886	55.00	Per month	44.53	Havre de Grace, Md.
Hopewell, James	Laborer	June 7 to 30, 1886	1.50	Per day	18.15	St. Jerome's, Md.
Hopewell, Pinkney	do	do	1.50	do	26.25	Do.
Horan, John H.	do	Nov. 1, 1885, to June 30, 1886	1.50	do	50.25	Do.
Do	Spawn-taker	Apr. 23 to May 31, 1886	55.00	Per month	69.67	Fort Washington, Md.
Horton, E. S.	Messenger	June 1 to 7, 1886	1.83 $\frac{1}{2}$	Per day	12.83	Do.
Hosford, C. J.	do	Nov. 14 and 18, 1885	2.00	do	4.00	Northville, Mich.
Houston, Joseph	Spawn-taker	Nov. 8 to 29, 1885	2.50	do	55.00	Do.
Howard, W. Key	Steward	Mar. 16 to June 30, 1886	30.00	Per month	105.00	Havre de Grace, Md.
Hoy, E.	Apprentice	Apr. 19 to May 31, 1886	35.00	do	49.00	Do.
Hugh, Thomas	Laborer	Aug. 29 to Sept. 3, 1885	1.00	Per day	6.00	Rawley Springs, Va.
Hurkett, Oscar	do	July 1, 1885, to June 30, 1886	35.00	Per month	420.00	Wood's Holl, Mass.
Irvin, John	Spawn-taker	Oct. 31 to Dec. 16, 1885	2.00	Per day	70.00	Northville, Mich.
Irwin, William	Laborer	May 12 and 13, 1886	2.50	do	5.00	Wytheville, Va.
Jack, Indian	Spawn-taker	April 19 to May 22, 1886	45.00	Per month	23.80	Havre de Grace, Md.
Jackson, Richardson	Laborer	April 1 to 3, 1886	1.00	Per day	3.00	McCloud River, Cal.
Janson, John	do	Aug. 1, 16, 1885	1.25	do	2.50	Carp production.
Jeremy, Peter	Carpenter	July 1, 1885, to June 30, 1886	65.00	Per month	780.00	Wood's Holl, Mass.
Jerrell, H. P.	Spawn-taker	Nov. 11 to 17, 1885	2.50	Per day	17.50	Northville, Mich.
Jim, Indian	Clerk	July 1, 1885, to June 30, 1886	83.33 $\frac{1}{3}$	Per month	972.22	Division of records.
Joe, Indian	Laborer	July 1-20, 1885	1.00	Per day	20.00	McCloud River, Cal.
Do	do	Nov. 1 to 3, 1885	1.00	do	3.00	Do.
Johnnie, Indian	do	Dec. 1 to 10, 1885	1.25	do	12.50	Do.
Johnson, A.	Laborer	Oct. 1 to Dec. 3, 1885	1.00	do	15.00	Do.
Johnson, James	Spawn-taker	Nov. 7 to 21, 1885	2.50	do	37.50	Northville, Mich.
Johnson, J.	Laborer	July 1 to Sept. 30, 1885	40.00	Per month	120.00	Wood's Holl, Mass.
Do	do	Sept. 9 to 12, 1885	1.00	Per day	4.00	Waynesboro, Va.

Johnson, Nelson	do	July, 1885; Apr. 19 to June 30, 1886.	1.50	do	25.75	St. Jerome's, Md.
Johnson, Robert S.	Assistant messenger	July 1 to 11, 1885	65.00	Per month	23.06	Car No. 3.
Do	do	Oct. 19 to 31, 1885	65.00	do	27.26	Do.
Do	do	Nov. 1, 1885, to Jan. 31, 1886	75.00	do	225.00	Carp distribution.
Johnstone, C. G.	do	Mar. 15 to June 15, 1886	75.00	do	228.63	Whitefish distribution.
Jones, H. W.	do	June 21 to 30, 1886	75.00	do	25.00	Schooner <i>Grampus</i> .
Jones, James T.	Second-mate	Apr. 21 and 22, 1886	1.25	Per day	2.50	Carp production.
Jones, George A.	Spawn-taker	Mar. 31 to May 22, 1886	55.00	Per month	92.25	Havre de Grace, Md.
Do	Assistant messenger	Oct. 21, 1885, to Jan. 6, 1886	55.00	do	140.16	Car No. 1.
Do	Laborer	Jan. 7 to Apr. 20, 1886	55.00	do	191.01	Wytheville, Va.
Do	Spawn-taker	Apr. 21 to May 31, 1886	55.00	do	73.33	Fort Washington, Md.
Junkin, J. H.	Assistant	Aug. 25 to 29, 1885	1.50	Per day	7.50	Northville, Mich.
Joyce, Sarah	Temperature observer	July 1, 1885, to June 30, 1886	5.00	Per month	60.00	Fort Washington, Md.
Keenan, James	Laborer	July, 1885	35.00	do	35.00	Havre de Grace, Md.
Do	Spawn-taker	Mar. 31 to May 31, 1886	55.00	do	104.50	Do.
Kenley, D. W.	Fish culturist	July 1, 1885, to June 30, 1886	60.00	do	720.00	Do.
Kenley, Richard	Cook's assistant	Mar. 31 to May 31, 1886	20.00	do	40.00	Do.
Kidder, J. H.	Chemist	July 1, 1885, to June 30, 1886	100.00	do	1,200.00	Carp production.
Knotts, George W.	Laborer	Aug. 1 to Oct. 28, 1885	1.50	Per day	72.88	Inquiry, Wood's Holl, Mass.
Koons, B. F.	Assistant	July 20 to Aug. 27, 1885	2.00	do	78.00	Division of distribution.
Lammond, R. E.	Copyist	July 16 to 31, 1885	30.00	Per month	15.00	Division of records.
Do	do	Apr. 1 to May 22, 1886	35.00	do	59.83	Havre de Grace, Md.
Landvoight, Frank	Spawn-taker	Dec., 1885	2.00	Per day	6.00	Do.
Laplan, Joseph	do	Mar. 31 to May 1, 1886	45.00	Per month	47.90	Do.
Larkin, Timothy	do	July 1, 1885, to June 30, 1886	55.00	do	660.00	Division of records.
Latimer, C. E.	Clerk	Nov. 18 to 25, 1885	2.00	Per day	16.00	Northville, Mich.
Lazette, Lewis	Spawn-taker	June 15 and 16, 1886	2.00	do	4.00	Do.
Le Clear, A.	Assistant	June 7 to 16, 1886	1.50	do	13.50	St. Jeromes, Md.
Lee, Henry	Laborer	July 17 to Sept. 7, 1885	2.00	do	106.00	Inquiry, Wood's Holl, Mass.
Lee, L. A.	Assistant	Jan. 15 to 19, 1886	1.00	do	5.00	Car No. 1.
Lee, Orlando	Carp distribution	June 21 to 24, 1886	1.75	do	7.00	Wood's Holl, Mass.
Lee, Patrick	Laborer	July 1, 1885, to June 30, 1886	60.00	Per month	720.00	Steamer <i>Albatross</i> .
Lee, Thomas	Assistant	July 1 to 11, 1885	45.00	do	15.96	Car No. 3.
Leech, James Y.	Assistant messenger	July 1, 1885, to Jan. 31, 1886	40.00	do	280.00	Central Station.
Leonard, Timothy	Watchman	April 1 to May 1886	50.00	do	100.00	Fort Washington, Md.
Do	do	Oct. 21, 1885, to Jan. 31, 1886	55.00	do	184.51	Car No. 1.
Lewis, W. T.	Assistant messenger	Mar. 15 to June 15, 1886	55.00	do	167.66	Shad distribution.
Do	do	July 1, 1885, to June 30, 1886	50.00	do	550.00	Division of property.
Lincoln, Anne C.	Clerk	Nov. 9 to 27, 1885	2.50	Per day	47.50	Northville, Mich.
Ling, C.	Spawn-taker	May 4 to 18, 1886	15.00	Per month	7.50	Havre de Grace, Md.
Linkin, John	Laborer	May 5 to 22, 1886	35.00	do	13.54	Do.
Linthicum, Edwin C.	Spawn-taker	do	35.00	do	13.54	Do.
Linthicum, Samuel W.	do	July 14 to Sept. 9, 1885	2.00	Per day	116.00	Wood's Holl, Mass.
Linton, E.	Assistant	Oct. 20, 1885, to June 30, 1886	1.50	do	283.09	Carp production.
Livesay, C. T.	Laborer	July 1 to Oct. 31, 1885	20.00	Per month	64.84	Messenger.
Lofty, Frank L.	Office of chief assistant	Aug. 1 to 16, 1885	.50	Per day	3.00	Carp production.
Lohman, Harry	Laborer	Nov. 16 to 30, 1885	45.00	Per month	22.50	Northville, Mich.
Loneden, Henry T.	Helper	Dec. 1 and 2, 1885	1.50	Per day	3.00	Do.
Do	do	May 3 to June 15, 1886	45.00	Per month	64.60	Car No. 3.
Lucas, Edward R.	Apprentice messenger					

FISCAL YEAR 1885-'86—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Lucas, Henry	Cook	May 8 to June 15, 1886	\$45.00	Per month	\$57.34	Car No. 3.
Lucas, Robert	Laborer	July 1 to 15, 1885	.75	Per day	4.75	Carp production.
Lucas, Robert H.	do	July 16 to 31, 1885	.75	do	6.75	Do.
Luckett, John F.	Spawn-taker	July 7 to Aug. 5, 1885	50.00	Per month	48.40	Propagation of Spanish mackerel.
Do	Coxswain of launch	Apr. 18 to May 31, 1886	55.00	do	78.84	Launch Lille, Spanish mackerel.
Do	do	June, 1886	60.00	do	60.00	Do.
Lynch, Richard	In charge arsenal ponds	July 1, 1885, to June 30, 1886	15.00	do	180.00	
McClain, George C.	Spawn-taker	Apr. 1 to 8, 1886	45.00	do	12.00	
Do	Laborer	Apr. 27 to May 31, 1886	1.50	Per day	52.50	Havre de Grace, Md.
Do	Painter	June 12 and 14, 1886	1.50	do	3.00	Central Station.
McDonald, Donald	Mechanic	Sept. 19 to 23	3.00	do	10.50	Painting chests for Wood's Holl, Mass.
McDonald, M.	Chief division of distribution	July 1, 1885, to June 30, 1886	200.00	Per month	2,400.00	Alpena, Mich.
McDowell, C. M.	Spawn-taker	Apr. 15 to May 31, 1886	55.00	do	84.33	Fort Washington, Md.
Machen, F. W.	Clerk	Sept. 23 to 25	2.50	Per day	7.50	Do.
Mack, John	Laborer	July, 1885	35.00	Per month	35.00	Havre de Grace, Md.
Do	do	Oct. 20 to Nov. 21, 1885	1.50	Per day	28.12	Carp production.
Mackall, D. B.	Assistant messenger	Oct. 19, 1885, to Jan. 31, 1886	55.00	Per month	188.06	Cars Nos. 1 and 2.
Do	do	Mar. 15 to June 15, 1886	55.00	do	167.61	Cars Nos. 1 and 3.
McKenzie, Donald	Spawn-taker	Nov. 1 to 14, 1885	2.00	Per day	28.00	Alpena, Mich.
McLean, M.	do	Nov. 17 to 21, 1885	2.00	do	10.00	Do.
McLeod, John	do	Sept. 28 to Oct. 7, 1885	1.00	do	10.00	Do.
McNamee, John	do	Mar. 31 to May 22, 1886	45.00	Per month	78.38	Havre de Grace, Md.
McNamey, John	do	do	55.00	do	95.80	Do.
McNitt, D. A.	do	Nov. 10 to 24, 1885	2.00	Per day	30.00	Northville, Mich.
McPhee, Peter	Watchman	Apr. 15 to 30, 1886	.80	do	12.80	Schooner Grampus.
Do	Seaman	May and June, 1886	45.00	Per month	90.00	Schooner Grampus.
Mahoney, Samuel	Cooper	Feb. 1 to 15, 1886	2.50	Per day	2.50	Do.
Marbury, Ella M.	Clerk	July 1, 1885, to June 30, 1886	75.00	Per month	900.00	Division of property.
Martin, S. J.	Watchman and collector	do	50.00	do	600.00	Gloucester, Mass.
Mather, Fred	Assistant	do	500.00	Per year	500.00	Cold Spring Harbor, New York.
Matheson, Malcolm	Spawn-taker	Nov. 1 to 24, 1885	2.00	Per day	48.00	Alpena, Mich.
Maxwell, James	Apprentice spawn-taker	Apr. 15 to May 15, 1886	35.00	Per month	19.60	Havre de Grace, Md.
Maxfield, John	Spawn-taker	Nov. 7 to 19, 1885	2.50	Per day	32.50	Northville, Mich.
Maynard, William	Fireman	Dec. 1, 1885, to Jan. 31, 1886	35.00	Per month	70.00	Central Station.
Do	do	Feb. and Mar., 1886	40.00	do	80.00	Do.
Do	Spawn-taker	Apr. 1 to May 31, 1886	55.00	do	110.00	Fort Washington, Md.
Do	Watchman	June, 1886	45.00	do	45.00	Central Station.
Menshaw, William H.	Spawn-taker	Mar. 31 to May 22, 1886	45.00	do	78.38	Havre de Grace, Md.
Myers, William Thomas	Cook	Apr. 10 to May 22, 1886	30.00	do	42.29	Do.
Miller, Edward	Mechanic	Sept. 22, 1885	1.50	Per day	1.50	Alpena, Mich.
Do	Spawn-taker	Sept. 26 to Oct. 15, 1885	1.50	do	15.00	Do.
Do	Sawing one-half cord wood	Oct. 8			.50	Do.

Miller, Henry C.	Spawn-taker	Apr. 15 to May 31, 1886	45.00	Per month	69.00	Havre de Grace, Md.
Miller, William	do	Nov. 1 to 24, 1885	2.00	Per day	42.00	Alpena, Mich.
Milligan, C. L.	Draughtsman	Dec. 2 to 30, 1885	.40	Per hour	44.20	Engineer's office.
Do	Lettering, etc.		.40	do	9.60	Do.
Do	do	June 7 to 11, 1886	.35	do	8.40	Do.
Mitchell, Ed. S.	Laborer	July, 1885	35.00	Per month	35.00	Havre de Grace, Md.
Money, Henry J.	do	Dec. 1 to 8, 1885	1.50	Per day	10.50	Northville, Mich.
Moore, Daniel	Scullion	Apr. 20 to May 31, 1886	25.00	Per month	34.17	Fort Washington, Md.
Moore, George	Spawn-taker	Nov. 10 to 27, 1885	2.50	Per day	45.00	Northville, Mich.
Moore, George H. H.	Messenger	July 1 1885, to June 30, 1886	100.00	Per month	1,200.00	Car No. 2.
Moore, William H.	Spawn-taker	Nov. 10 to 27, 1885	2.50	Per day	45.00	Northville, Mich.
Morgan, W. H.	Laborer	July 1 to Sept. 30, 1885	40.00	Per month	120.00	Central Station.
Morrison, Roderick	Spawn-taker	Sept. 28 to Oct. 7, 1885	1.00	Per day	10.00	Alpena, Mich.
Motley, E. P.	do	Nov. 1 to 19, 1885	2.00	do	38.00	Do.
Munson, Horatio	Laborer	Oct. 22 to Nov. 19, 1885	1.25	do	32.74	Grand Lake Stream, Me.
Munson, Stephen	do	Sept. 1 to Nov. 18, 1885	1.00	do	35.00	Do.
Munson, William H.	do	Oct. 1 to 31, 1885	1.75	do	47.25	Maine, salmon production.
Do	do	Sept. 17 to Oct. 25, 1885	.25	Per night	9.50	Do.
Do	do	Nov. 1, 1885, to Mar. 31, 1886	1.75	Per day	240.62	Do.
Murphy, Thomas	do	Apr. 16 to May 31, 1886	1.25	do	46.25	Carp-ponds, Washington, D. C.
Do	do	June, 1886	1.50	do	45.00	Do.
Murphy, W. W. J.	Clerk	July 1, 1885, to June 30, 1886	110.00	Per month	1,302.26	Division of accounts.
Neff, Louis	Laborer	do	1.50	Per day	509.61	Carp production.
Nye, Willard, jr.	Assistant	Feb. 3 to May 15, 1886	60.00	Per month	204.74	Steamer <i>Albatross</i> .
O'Brien, Daniel	Laborer	June 21 to 24, 1886	1.75	Per day	7.00	Wood's Holl, Mass.
O'Brien, Joseph	do	Sept. 4 to 14, 1885	1.75	do	17.50	Do.
O'Connor, J. J.	Clerk	July 1, 1885, to June 30, 1886	115.00	Per month	1,380.00	Division of distribution.
Offenstine, John	Laborer	Mar. 1 to June 30, 1886	1.25	Per day	25.30	Carp production.
O'Hearn, Patsy	Spawn-taker	Nov. 11 to 17, 1885	2.50	do	17.50	Northville, Mich.
Olmston, Young	Laborer	July 1 to 23, 1885	1.75	do	33.25	Wood's Holl, Mass.
Do	do	July 24 to Oct. 31, 1885	40.00	Per month	90.32	Do.
Do	do	Nov. 1, 1885, to June 30, 1886	35.00	do	280.00	Do.
O'Neil, Warren	Cook's assistant	Apr. 19 to May 22, 1886	20.00	do	21.52	Havre de Grace, Md.
Owen, G. P.	Spawn-taker	Nov. 9 to 19, 1885	2.50	Per day	27.50	Northville, Mich.
Page, W. F.	Superintendent	July 1, 1885, to June 30, 1886	100.00	Per month	799.03	Central Station.
Palmer, William	Modeler	do	65.00	do	780.00	Preparation of collections.
Parker, H. P.	Copyist	do	30.00	do	360.00	Division of records.
Parker, Peter, jr.	Assistant	do	75.00	do	900.00	Preparation of collections.
Parker, Samuel	Laborer	Aug. 1 to 27, 1885	1.25	Per day	22.50	U. S. carp ponds, Washington, D. C.
Do	do	May 15, 1886	1.25	do	1.25	Do.
Do	do	May 16 to 31, 1886	1.50	do	15.00	Do.
Do	do	June, 1886	1.25	do	28.43	Do.
Do	do	May 15 to 22, 1886	1.00	do	3.00	Orland, Me.
Partridge, F. W.	do	do	1.50	do	4.50	Do.
Partridge, George H.	Guarding hatchery	Apr. 1 to June 30, 1886	5.00	Per month	10.00	Maine salmon.
Partridge, Thomas	Laborer	May 15 to 31, 1886 (3 days)	1.56	Per day	4.50	Do.
Do	Stenographer	Oct. 24 and Dec. 8, 1885	.12	Per 100 words	117.60	Fishery statistics.
Pendleton, Ansel E.	Laundress	July, Aug., and Sept., 1885	20.00	Per month	60.00	Wood's Holl, Mass.
Perry, Mary E.	Planting fish	May 11 to 16, 1886	2.00	Per day	12.00	Alpena, Mich.
Persons, Byron W.	Spawn-taker	Oct. 1 to 7, 1885	1.50	do	10.50	Do.

FISCAL YEAR 1885-'86—Continued.

Name.	Service.	Period of time.	Rate of Pay.		Total of pay.	Remarks.
			Pay.	Time.		
Pinkney, Hopewell	Laborer	July, 1885	\$30.00	Per month	\$30.00	St. Jerome's, Md.
Platts, George	Spawn-taker	Nov. 1 to 24, 1885	2.00	Per day	48.00	Alpena, Mich.
Posey, Eugene J.	Apprentice	Apr. 27 to May 22, 1886	35.00	Per month	29.50	Havre de Grace, Md.
Posey, J. A.	Laborer	July, 1885	35.00	do.	35.00	Do.
Do.	Spawn-taker	Apr. 2 to 30, 1886	55.00	do.	53.17	Do.
Do.	do.	May 1 to 22, 1886	55.00	do.	39.03	Do.
Price, John G.	do.	Apr. and May, 1886	45.00	do.	69.00	Do.
Procter, Henry	Laborer	July 1 to Nov. 30, 1885	1.50	Per day	192.37	Carp production.
Radcliff, Robert	do.	Sept. 1, 1885, to June 30, 1886	30.00	Per month	300.00	Preparation of collections.
Rathbun, M. J.	Assistant	July 1, 1885, to June 30, 1886	40.00	do.	447.73	McCloud River.
Rathbun, Richard	do.	do.	2,000.00	Per year	2,000.00	Do.
Ravenel, W. de C.	Superintendent	May 1 to Apr. 31, 1886	100.00	Per month	1,200.00	St. Jerome's, Md.
Reed, James	Watchman	Oct. 16, 1885	1.50	Per day	37.50	Alpena, Mich.
Rihburg, Fred	Assistant	Sept. and Oct., 1885	2.50	do.	1.25	Sandusky, Ohio.
Riordan, Daniel	Laborer	Oct. 26 to Nov. 19, 1885	40.00	Per month	80.00	Wood's Holl, Mass.
Ripley, C. B.	Collector	Oct. 1 to Sept., 1885	1.50	Per day	32.02	Grand Lake Stream, Me.
Robinson, E. M.	Fish-culturist	Oct., Nov., and Dec., 1885	55.00	do.	165.00	Wytheville, Va.
Do.	Assistant	Jan. 7, 1886	55.00	do.	165.00	Wood's Holl, Mass.
Do.	Fish-culturist	Feb. 1 to Apr. 15, 1886	55.00	do.	55.00	Wytheville, Va.
Do.	Assistant shad distribution	Apr. 16 to 30, 1886	55.00	do.	137.50	Fort Washington, Md.
Do.	do.	May, 1886	65.00	do.	32.50	Car No. 3.
Do.	Fish-culturist	June 1 to 15, 1886	55.00	do.	55.00	Do.
Do.	do.	June 15 to 30, 1886	55.00	do.	27.50	Launch Lillie.
Robinson, Washington	Janitor	July 1, 1885, to June 30, 1886	70.00	do.	35.00	Do.
Rockwell, Julia L.	Clerk	do.	60.00	do.	720.00	Division of records.
Rogers, E.	Spawn-taker	Nov. 9 to 25, 1885	70.00	do.	840.00	Do.
Rogers, E. I.	Apprentice	Mar. 20 to June 15, 1886	2.50	Per day	42.50	Northville, Mich.
Do.	Draughtsman	June 16 to 30, 1886	45.00	Per month	129.92	Car No. 2.
Rogers, J. W.	Machinist	Dec. 16 to 19, 1885	2.00	Per day	26.00	Do.
Rogers, O. V.	Laborer	Jan. 1 to June 30, 1886	2.00	do.	8.00	Northville, Mich.
Rogers, S.	Spawn-taker	Nov. 9 to 27, 1885	1.25	do.	181.25	Cold Spring Harbor, N. Y.
Root, A. W.	Assistant	Oct. 16, 1885, to May 8, 1886	2.50	do.	47.50	Northville, Mich.
Do.	Laborer	May 1 to 8, 1886	60.00	Per month	400.50	Do.
Do.	Assistant	July 1, 1885, to June 30, 1886	1.50	Per day	10.50	Do.
Root, M. S.	Laborer	May 17 to 19, 1886	60.00	Per month	720.00	Do.
Rowell, Almond	Assistant	July 1, 1885, to June 30, 1886	1.50	Per month	4.50	Orland, Me.
Ryder, John A.	Fish-culturist	July 1 to Aug. 5	125.00	do.	1,500.00	Inquiry, Wood's Holl, Mass.
Sauerhoff, William P.	do.	Aug. 6, 1885, to June 30, 1886	65.00	do.	75.48	St. Jerome's and Havre de Grace, Md.
Do.	Laborer	Apr. 1 to 25, 1886	75.00	Per day	812.90	Carp production, Washington, D. C.
Scroggs, George L.	do.	May 4 to 18, 1886	1.25	Per month	25.00	Havre de Grace, Md.
Scanton, Daniel F.	do.	do.	15.00	Per month	7.50	Do.

Schultz, C.	Nov. 1 to 21, 1885.	Spawn-taker.	Per day.	42.00	Alpena, Mich.
Scott, Geo.	June, 1886.	Laborer.	do.	17.50	Carp ponds, Washington, D. C.
Scudder, Chas. W.	July 1, 1885, to June 30, 1886.	Clerk.	Per month.	1,080.00	Division of records.
Seagle, Geo. A.	do.	Superintendent.	do.	900.00	Wytheville, Va.
Seagle, J. B.	Nov. 17 to 27, 1885.	Laborer.	Per day.	12.25	Do.
Seitz, M.	Nov. 8 to 29, 1885.	Spawn-taker.	do.	55.00	Northville, Mich.
Shea, Philip.	June, 1886.	Laborer.	do.	8.75	Carp production, Washington, D. C.
Shepard, Geo.	Sept. 9 to 12, 1885.	do.	do.	4.00	Waynesboro, Va.
Shorter, H. B.	March 29 to June 9, 1886.	Cook.	Per month.	96.00	Fort Washington, Md.
Do.	July (2 days) 1885.	Laborer.	Per day.	3.00	Do.
Shorter, Wm.	Nov. 1, 1885; April 20 to June 17, 1886.	do.	do.	45.50	St. Jerome's Md.
Shuster, E. Harry.	July 1, 1885, to June 30, 1886.	Clerk.	Per month.	720.00	Steamer <i>Albatross</i> .
Siffield, Rudolph.	Nov. 6 to 29, 1885.	Spawn-taker.	Per day.	60.00	Northville, Mich.
Simmons, Ambrose.	March 16 to 31, 1886.	Laborer.	do.	5.62	Carp production.
Simmons, H. A.	Nov. 17 to 25, 1885.	Spawn-taker.	do.	18.00	Northville, Mich.
Simmons, Newton.	July 1, 1885, to June 30, 1886.	Messenger.	Per month.	1,200.00	Car No. 1.
Skible, John.	Nov. 9 to 27, 1885.	Spawn-taker.	Per day.	47.50	Northville, Mich.
Skinner, T. E.	Oct. 1, 1885, to June 30, 1886.	Laborer.	Per month.	360.00	Preparation of collections.
Slack, R. H.	July 1 to Nov. 15, 1885.	Assistant.	do.	450.00	Wood's Holl, Mass.
Slaght, Isaac.	Oct. 27, 1885, to April 30, 1886.	do.	do.	308.06	Northville, Mich.
Smiley, Chas. W.	July 1, 1885, to June 30, 1886.	Chief division of records.	Per year.	2,000.00	
Smillie, T. W.	do.	Photographer.	Per month.	1,800.00	
Smith, A. W.	Dec. 1, 1885, to June 30, 1886.	Clerk.	Per month.	315.00	Division of accounts.
Smith, H. M.	Jan. 1, 1886, to June 30, 1886.	do.	do.	300.00	Preparation of statistics.
Smith, James.	Aug. 15 to 31, 1885.	Laborer.	Per day.	17.94	Wood's Holl, Mass.
Do.	Sept. and Oct., 1885.	do.	do.	49.88	Do.
Smith, John.	Oct. 20, 1885, to July 11, 1886.	Cook.	Per month.	168.37	Car No. 3.
Smith, Sanderson.	July 1 to Nov. 25, 1885.	Assistant.	do.	604.16	Preparation of collections, steamer <i>Albatross</i> .
Smith, S. I.	July 15 to Sept. 15, 1885.	do.	do.	256.00	Wood's Holl, Mass.
Smith, Thos. H.	Dec. 28 to Jan. 8, 1886.	Cook.	Per day.	12.00	Car No. 3.
Snell, Merwin P.	Aug. 1, 1885, to June 30, 1886.	Gathering statistics.	Per month.	550.00	Statistics.
Snellgrave, Edward.	Sept. 28 to Oct. 7, 1885.	Spawn-taker.	Per day.	10.00	Alpena, Mich.
Somerville, Neros.	Nov., 1885.	Messenger.	Per month.	13.33	Office expenses.
Sorrel, Joseph.	May 4 to 18, 1886.	Laborer.	do.	7.50	Havre de Grace, Md.
Stanford, E. H.	Nov. 19 to Dec. 31, 1885.	Copyist.	do.	49.00	Division of distribution.
Starkey, Geo.	June 1 to 30, 1886.	Laborer.	Per day.	23.43	Carp production.
Stevens, C. L.	Oct. 21, 1885, to July 11, 1886.	Assistant messenger.	Per month.	216.25	Car No. 3.
Stewart, C. A.	Apr. 25 to June 30, 1886.	Messenger.	do.	220.00	Distribution of shad.
Stewart, Wm.	Apr. 1 to 15, 1886.	Engineer.	do.	25.00	Northville, Mich.
Stimpson, A. L.	Oct. 6, 1885, to June 30, 1886.	Janitress.	do.	116.77	Office expenses.
Stoerzer, A. J.	July 1, 1885, to June 30, 1886.	Messenger.	do.	240.00	Division of records.
Stone, John.	Nov. 6 to Dec. 2, 1885.	Spawn-taker.	Per day.	67.50	Northville, Mich.
Stone, Livingston.	July 1, 1885, to June 30, 1886.	Superintendent.	Per year.	500.00	California salmon.
Stoner, Geo.	Nov. 12 to 21, 1885.	Spawn-taker.	Per day.	20.00	Northville, Mich.
Story, D. A.	Feb. 1 to Apr. 15, 1886.	Superintendent.	do.	370.00	Construction schooner <i>Grampus</i> .
Strachon, Caesar.	Feb. 27 to Mar. 18, 1886.	Pilot.	do.	20.00	Steamer <i>Albatross</i> .
Sunwalt, John.	July, 1885.	Laborer.	Per month.	35.00	Do.
Do.	Apr. 1 to May 22, 1886.	Spawn-taker.	Per month.	76.93	Havre de Grace, Md.
Taylor, Randolph.	June 5 to 30, 1886.	Laborer.	Per day.	22.65	St. Jerome's, Md.

FISCAL YEAR 1885-'86.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Terrell, L. D.	Messenger.	Apr. 28 to May 31, 1886.	\$45.00	Per month.	\$49.50	Distribution of shad.
Thomas, James	Laborer.	July 1 to Oct. 31, 1885.	1.50	Per day.	33.00	Northville, Mich.
Thomas, Logan	Watchman	July 1, 1885, to Jan. 9, 1886.	45.00	Per month.	283.07	United States carp ponds.
Thompson, Everett	Seine captain	Mar. 29 to June 12, 1886.	130.00	do	324.58	Havre de Grace, Md.
Thompson, Frank	Spawn-taker.	May 5 to 22, 1886.	15.00	do	8.71	Do.
Do.	do	May 5 to 22, subsistence.	.22	Per day.	3.91	Do.
Thomson, Robert	Watchman	Nov. 10 to Dec. 4, 1885.	2.00	Per night.	50.00	Alpena, Mich.
Do.	Laborer.				1.00	Do.
Thompson, W. W.	do	Oct. 5 to 10, 1885.	1.50	Per day.	7.00	Washington, D. C.
Do.	do	Oct. 6, 1885.	1.00	Per night.	1.00	Do.
Timbers, Robert	do	July 1, 1885, to Sept. 30, 1885.	45.00	Per month.	135.00	Central station.
Tindall, John	Spawn-taker.	Nov. 1 to 22, 1885.	2.00	Per day.	44.00	Alpena, Mich.
Todd, James	do	Apr. 1 to May 9, 1886.	55.00	Per month.	70.97	Havre de Grace, Md.
Tolbert, George H.	Fish culturist	July 1, 1885, to Dec. 17, 1885.	65.00	do	360.10	St. Jerome's, Md.
Do.	do	Dec. 18 to 31, 1885.	65.00	do	29.90	Havre de Grace, Md.
Do.	do	Feb. 1 to Apr. 30, 1886.	70.00	do	210.00	Central station.
Do.	do	May 1 to June 30, 1886.	65.00	do	130.00	Havre de Grace, Md.
Townsend, C. H.	Assistant	July 1, 1885, to June 30, 1886.	60.00	do	720.00	Steamer <i>Albatross</i> .
Townsend, George W.	Diver.	Oct. 28 to 30, 1885 (21 hours).	3.00	Per hour.	63.00	Wood's Holl, Mass.
Traylor, James G.	Clerk.	July 1 to Dec. 31, 1885.	75.00	Per month.	450.00	Office expenses.
Do.	do	Jan. 1 to June 30, 1886.	100.00	do	600.00	Do.
Trenholm, J. D.	Spawn-taker.	May 1 to June 26, 1886.	35.00	do	60.81	Havre de Grace, Md.
Troden, James	do	Nov. 19, 1885.	2.00	Per day.	2.00	Alpena, Mich.
Tucker, Arnold	Laborer	June 7 to 30, 1886.	1.50	do	27.90	St. Jerome's, Md.
Tulian, E. A.	Assistant	Sept. 13, 1885, to May 24, 1886.	45.60	Per month.	376.80	Alpena, Mich.
Tune, M. N.	Messenger division of accounts.	Oct. 8, 1885, to June 30, 1886.	40.00	do	350.97	Office expenses.
Van Seiver, John	Spawn-taker.	May 4 to 22, 1885.	35.00	do	21.45	Havre de Grace, Md.
Verrill, A. E.	Assistant.	July 1, 1885, to June 30, 1886.	125.00	do	1,500.00	Preparation of collections.
Voorhees, J. R.	Spawn-taker.	Nov. 15 to 28, 1885.	2.00	Per day.	28.00	Alpena, Mich.
Wallace, Charles	Laborer.	July, 1885.	35.00	Per month.	35.00	Havre de Grace, Md.
Wallace, Henry	do	Aug. 1 to 16, 1885 (2 days).	1.25	Per day.	2.50	Carp production.
Walsh, Joseph	Clerk	July 22 to Oct. 16, 1885.	40.00	Per month.	112.90	Wood's Holl, Mass.
Walters, C. H.	Laborer.	Jan. 1 to May 9, 1886.	1.50	Per day.	148.50	Cold Spring Harbor, New York.
Walters, S. A.	do	Jan. 18 to 23, 1886.	2.00	do	12.00	Do.
Walton, Robert C.	Watchman	July 1 to Aug. 31, 1885.	10.00	Per month.	20.00	Washington, D. C., Navy-Yard.
Wardell, Joseph	Laborer.	Mar. 1 to 31, 1886 (131 days).	1.25	Per day.	17.18	Carp ponds, Washington, D. C.
Warick, Alfred	do	Feb. 23 to 26, 1886 (31 days).	1.25	do	4.68	Fort Washington, Md.
Warner, Sydney	Apprentice	Apr. 19 to May 22, 1886.	35.00	Per month.	38.83	Havre de Grace, Md.
Warren, Rudolph	do	Apr. 1 to 30, 1886.	35.00	do	35.00	Do.
Warwick, Birt.	Spawn-taker.	Oct. 25 to Nov. 8, 1885.	2.00	Per day.	30.00	Alpena, Mich.
Do.	Assistant	Apr. 27 to May 19, 1886.	1.50	do	34.50	Do.
Warwick, Henry	Spawn-taker.	Oct. 31 to Nov. 18, 1885.	2.00	do	38.00	Do.

Warwick, R. T.	Apprentice	May 1 to June 15, 1886	45. 00	Per month	112. 50	Car No. 2.
Watkins, Mary A.	Janatrix	July 1 to Sept. 30, 1885	15. 00	do	45. 00	Wood's Holl, Mass.
Watkins, Thomas	Steward	do	45. 00	do	135. 00	Do.
Do	Laborer	Oct. 9, 1885, to June 30, 1886	40. 00	do	349. 68	General and miscellaneous.
Welch, L. P.	Spawn-taker	Nov. 7 to 18, 1885	2. 50	Per day	30. 00	Northville, Mich.
West, James	Laborer	May 4 to 7, 1886	1. 50	do	6. 37	
White, William	Spawn-taker	Sept. 28 to Oct. 7, 1885	1. 00	do	10. 00	Alpena, Mich.
Whitney, B. F.	Carpenter	Oct. 28 to Dec. 7, 1885	2. 00	do	82. 00	Northville, Mich.
Whitney, Frank	Laborer	Nov. 2, 1885	1. 50	do	1. 50	Monroe, Mich.
Whitney, Frank J.	Carpenter	Oct. 28 to Dec. 7, 1885 (24 days)	2. 00	do	48. 00	Northville, Mich.
Wible, Henry C.	Laborer	July, 1885 (3 day); June 17 to 20, 1886	1. 50	do	3. 25	St. Jerome's, Md.
Wilcox, David B.	Assistant	Mar. 5 and 6, 1886	1. 25	do		
Wilcox, W. A.	do	July 1, 1885, to June 30, 1886	50. 00	Per month	1. 75	Northville, Mich.
Wilcox, Ella	Laborer	Nov. 16 to 30, 1885	22. 00	do	600. 00	Gloucester, Mass.
Do	do	Dec. 25 to 29, 1885	. 75	Per day	11. 00	Northville, Mich.
Do	do	March 6, 1886	. 75	do	3. 38	Do.
Williams, George W.	Machinist	July 1, 1885, to May 23, 1886	60. 00	Per month	. 75	Do.
Do	Engineer	May 24 to June 30, 1886	80. 00	do	644. 52	Wood's Holl, Mass.
Williams, Robert	Laborer	Sept. 1 to 15, 1885 (7½ days)	1. 25	Per day	100. 65	Schooner <i>Grampus</i> .
Williams, W. L.	do	Nov. 17 to 30, 1885 (9 days)	1. 00	do	9. 69	Washington, D. C.
Willie, Indian	do	July 1 to Sept., 1885 (32 days)	1. 00	do	9. 00	Wytheville, Va.
Do	do	Nov. 1 to 14, 1885	1. 50	do	32. 00	McCloud River, Cal.
Wills, Horner	do	June 1 to 30, 1886	1. 25	do	21. 00	Do.
Wilson, Burnet	do	Aug. 1 and 16, 1885 (2 days)	1. 25	do	29. 99	Washington, D. C.
Wilson, J. Paul	Chief division of property	July 1, 1885, to June 30, 1886	2, 000. 00	Per year	2. 50	Do.
Wilson, William	Laborer	June 5 to 30, 1886 (18 days)	1. 50	Per day	2, 000. 00	Office expenses.
Winne, Charles L.	Spawn-taker	Nov. 7 to 20, 1885	2. 50	do	27. 00	St. Jerome's, Md.
Wires, A.	do	Nov. 6 to 18, 1885	2. 50	do	35. 00	Northville, Mich.
Wires, S. P.	Statistical agent	Aug. 21 to Sept. 16, 1885	75. 00	Per month	32. 50	Do.
Do	Assistant	Sept. 17, 1885, to June 30, 1886	75. 00	do	64. 19	Statistics great lakes.
Wolford, C. H.	Laborer	Apr. 20 to 28, 1886	1. 00	Per day	709. 99	Alpena, Mich.
Woodman, Frank	Draughtsman	Feb. 2 and 3, 1886	2. 50	do	8. 00	Wytheville, Va.
Wrightson, V. A.	Laborer	June 28 to 30, 1886	2. 00	do	5. 00	Northville, Mich.
Wroten, Winfield	Apprentice	Mar. 31 to Apr. 30, 1886	35. 00	Per month	6. 00	St. Jerome's, Md.
Do	Spawn-taker	May 1 to 31, 1886	45. 00	do	36. 13	Havre de Grace, Md.
Yeatman, Philip T.	Copyist	Nov. 10 to 27, 1885	2. 00	Per day	45. 00	Do.
Do	do	Apr. 19 to May 31, 1886	55. 00	Per month	32. 00	Fort Washington, Md.
Young, Sarah T.	Clerk	June 7 to 30, 1886	1. 50	Per day	77. 00	Do.
					30. 00	Office of accounts, Washington, D. C.
					118, 257. 73	

FISCAL YEARS 1886-'87—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Abbott, W. H.	Clerk	Nov. 24, 1886, to Apr. 30, 1887	\$50.00	Per month	\$261.66	Preparation of statistics.
Do.	do	May, 1887	65.00	do	65.00	Do.
Do.	do	June, 1887	100.00	do	100.00	Do.
Addison, A. C.	do	July 1 to Oct. 31, 1886	100.00	do	400.00	Office of accounts.
Do.	do	Nov. 1, 1886, to June 30, 1887	110.00	do	880.00	Do.
Alexander, A. B.	Seaman	July 1, 1886, to June 30, 1887	45.00	do	540.00	Schooner <i>Grampus</i> .
Atkins, Charles G.	Station superintendent	July 1, 1886, to Sept. 30, 1886	150.00	do	450.00	Maine stations.
Do.	do	Oct. 1, 1886, to June 30, 1887	200.00	do	1,800.00	Wood's Holl, Mass.
Axtell, William	Spawn-taker	Nov. 7 to 30, 1886	2.50	Per day	60.00	Northville, Mich.
Bagley, James A.	Laborer	Sept. 20 to Nov. 21, 1886	1.50	do	43.88	Grand Lake Stream, Me.
Baker, H. Percy	Office messenger	Sept. 4 to Oct. 9, 1886	25.00	Per month	29.76	Central offices.
Baldwin, A. H.	Assistant	July 1, 1886, to June 30, 1887	60.00	do	720.00	Arrangement of collections.
Barbour, S. S.	Steward	do	50.00	do	600.00	Schooner <i>Grampus</i> .
Barry, Patrick	Laborer	do	40.00	do	470.00	Wood's Holl, Mass.
Baur, J. P.	Assistant	July 1, 1886, to Aug. 10, 1886	60.00	do	80.00	Launch <i>Blue Wing</i> , Chesapeake Bay.
Do.	Spawn-taker	Mar. 31 to June 3, 1887	55.00	do	117.27	Fort Washington, Md.
Bean, T. H.	Assistant	July 1, 1886, to June 30, 1887	2,000.00	Per year	2,000.00	Arrangement of collections, etc.
Benedict, James E.	Naturalist	July 1 to Aug. 31, 1886	120.00	Per month	240.00	Steamer <i>Albatross</i> .
Bennett, Henry	Spawn-taker	Apr. 15 to May 31, 1887	45.00	do	69.00	Havre de Grace.
Bennett, William	Inspector	Mar. 1 to June 30, 1887	100.00	do	400.00	Steamer <i>Albatross</i> .
Blades, John H.	Spawn-taker	Apr. 4 to 30, 1887	50.00	do	45.00	Fort Washington, Md.
Do.	do	May 1 to 23, 1887	55.00	do	40.80	Do.
Blake, J. Henry	Draughtsman	Aug. 1 to 30, 1886	150.00	do	145.16	Investigations, Wood's Holl, Mass.
Bower, Seymour	Principal assistant	July 1, 1886, to June 30, 1887	125.00	do	1,500.00	Northville, Mich.
Bowles, John W.	Carpenter	Sept. 13 to Oct. 30, 1886	2.75	Per day	110.00	Wood's Holl, Mass.
Bowser, James A.	Cook	Nov. 1 to Dec. 31, 1886; Apr. 26 to June 15, 1887	45.00	Per month	165.00	Car No. 1.
Bradley, Ella	Egg-picker	Oct. 8 to 23, 1886; Jan. 10 to Feb. 18, 1887	22.00	do	24.11	Northville, Mich.
Brittain, William H.	Messenger	July 1, 1886, to June 30, 1887	25.00	do	300.00	Office of distribution
Brown, John E.	General assistant	July 1, 1886, to Dec. 31, 1886	100.00	do	600.00	Central Station.
Brown, Lewis	Steward	July 1 to Aug. 31, 1886	50.00	do	100.00	Steamer <i>Lookout</i>
Bryan, Edward C.	Clerk to Commissioner	July 7, 1886, to Oct. 31, 1886	36.00	do	137.03	Office of Commissioner.
Do.	do	June, 1887	42.00	do	42.00	Do.
Buck, William O.	Assistant	Sept. 8, 1886, to June 30, 1887	75.00	do	332.84	Maine stations.
Bush, C. E.	do	July 1 to Aug. 31; Nov., 1886, to June 30, 1887	40.00	do	400.00	do.
Bush, K. J.	do	Sept. 1 to Oct. 31, 1886	45.00	Per month	91.90	Arrangement of collections, New Haven, Conn.
Do.	do	July 1 and Aug.; Nov. 16, 1886, to June 30, 1887	45.00	do	450.00	Do.
Do.	do	Sept. and Oct. 1886	103.30	do	103.30	Do.

Butler, George E.	Messenger.	July 1 to Oct. 31, 1886.	45.00	Per month	180.00	Commissioner's office.
Do.	do	Nov. 1, 1886, to June 30, 1887.	35.00	do	280.00	Do.
Cameron, J. J.	Clerk	Apr. 1 to June 20, 1887.	55.00	do	146.66	Fort Washington, Md.
Campbell, Duncan	Seaman	July 1, 1886, to Jan. 31, 1887.	45.00	do	315.00	Schooner <i>Grampus</i> .
Carswell, James	Assistant	July 1, 1886, to June 30, 1887.	100.00	do	1,200.00	Chesapeake Bay, schooner <i>Grampus</i> ;
						Wood's Holl, Mass.; Great Falls, Md.
Champion, J. S.	Distribution messenger	May 11 to June 15, 1887.	45.00	do	52.98	Car No. 3.
Charley, Indian	Laborer.	July 1 to 8, 1886.	1.25	Per day	10.00	Baird, Cal.
Do.	do	Aug., 1886.	40.00	Per month	40.00	Do.
Do.	do	Sept. 16 to 30, 1886.	1.50	Per day	21.00	Do.
Chester, H. C.	Superintendent of stations	July 1 to 18, 1886.	150.00	Per month	87.09	Wood's Holl, Mass.
Clark, Alice E.	Clerk	Aug. 1, 1886, to Mar. 31, 1887.	50.00	do	400.00	Indexing and proof-reading.
Clark, Frank N.	Station superintendent	July 1, 1886, to June 30, 1887.	2,200.00	Per year	2,200.00	Michigan stations.
Clark, George T.	Spawn-taker.	May 7 to 31, 1887.	55.00	Per month	42.25	Havre de Grace, Md.
Cleaveland, D. H.	Watchman	Nov. 3, 1886, to June 30, 1887.	35.00	do	257.66	Wood's Holl, Mass.
Collins, D. E.	First mate.	July 1, 1886, to June 30, 1887.	115.00	do	1,380.00	Schooner <i>Grampus</i> .
Collins, George W.	Seaman	Oct. 21, 1886, to Jan. 30, 1887.	45.00	do	375.97	Do.
Collins, J. W.	Captain.	July 1, 1886, to Jan. 30, 1887.	150.00	do	1,800.00	Do.
Conture, Alex.	Spawn-taker	Nov. 1 to 25, 1886.	2.00	Per day	50.00	Alpena, Mich.
Conture, Fred.	Assistant at hatchery	Nov. 9 to Dec. 19, 1886.	1.50	do	61.50	Do.
Conway, W. L.	Laborer and watchman	July 1, 1886, to June 30, 1887.	45.00	Per month	540.00	Fish-ponds, Washington, D. C.
Corridon, J. J.	Clerk	do	100.00	do	1,200.00	Office of accounts.
Cox, William E.	do	July, 1886.	40.00	do	40.00	Statistics.
Crawford, James.	Night engineer	Nov. 22, 1886, to Mar. 31, 1887.	45.00	do	193.50	Northville, Mich.
Curtin, Thomas.	Watchman and laborer	July 1, 1886, to June 30, 1887.	55.00	do	660.00	Fish-ponds, Washington, D. C.
Dana, Richard	Distribution messenger.	Nov. 1 to Dec. 31, 1886; Feb. 26, 1887.	60.00	Per month	229.47	Car No. 1.
		Mar. 8, and May 2 to June 16, 1887.				
David, George E.	Machinist	July and Aug., 1886.	60.00	do	120.00	Wood's Holl, Mass.
Day, George E.	Spawn-taker.	April 13 to May 31, 1887.	55.00	do	88.00	Havre de Grace, Md.
Dean, H. D.	Assistant.	July 1, 1886, to June 30, 1887.	50.00	do	600.00	Northville, Mich.
Dickerson, William	Laborer	do	1.50	Per day	500.11	Fish-ponds, Washington, D. C.
Desmond, Jerry	do	Sept. 6 to 18, 1886.	1.50	do	18.00	Wood's Holl, Mass.
Do.	do	Oct. 22 to 25, 1886.	1.60	do	4.40	Do.
Donnelly, Frank L.	Distribution messenger.	Nov. and Dec., 1886.	90.00	Per month	180.00	Wood's Holl, Mass.
Donovan, James	Laborer.	Oct. 17 to 28, 1886.	1.50	Per day	12.75	Do.
Do.	do	Sept. 3 to Nov. 20, 1886.	1.75	do	103.68	Do.
Dow, James	do	Sept. 3 to 30, 1886.	1.50	do	33.75	Do.
Downey, Daniel.	do	Aug. and Oct. 2 to 9, 1886.	1.50	do	22.50	Do.
Do.	do	Sept. and Oct. and Nov., 1886.	1.60	do	90.00	Do.
Duff, James.	do	Aug. 17 to 28, 1886.	1.50	do	3.75	Do.
Do.	do	Oct. 1 to Nov. 20, 1886.	1.75	do	83.87	Do.
Duly, A. A.	Machinist	May 1 to June 30, 1887.	120.00	do	240.00	Fish-ponds, Washington, D. C.
Dunnington, W. A.	Distribution messenger.	July 21 to Aug. 31, 1886; Dec. 1, 1886, to June 30, 1887.	75.00	Per month	626.21	Car No. 2.
Earll, R. Edward	Assistant	July 1, 1886, to June 30, 1887.	150.00	do	1,800.00	Statistics.
Edwards, Vinal N.	Watchman and collector.	do	60.00	do	720.00	Wood's Holl, Mass.
Ellis, J. F.	Distribution messenger.	do	100.00	do	1,200.00	Car No. 3.
Elsemore, A. H.	Laborer.	Oct. 18 to Nov. 21, 1886.	1.50	Per day	43.13	Maine stations.
Fennell, F. P.	Clerk	July 1, 1886, to June 30, 1887.	50.00	Per month	600.00	Office of distribution.
Ferguson, T. B.	Chief assistant to Commissioner.	do	5,000.00	Per year	5,000.00	Central Station.
Fitzgerald, E. J.	Laborer.	Apr. 1 to June 3, 1887.	45.00	Per month	94.50	

FISCAL YEARS 1886-'87—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Fitzgerald, Philip.....	Cabin-boy.....	Sept. 6, 1886, to June 30, 1887.....	\$45.00	Per month.....	\$450.00	Schooner <i>Grampus</i> .
Fletcher, G. G.....	Spawn-taker.....	Apr. 11 to May 31, 1887.....	60.00	do.....	100.00	Havre de Grace, Md.
Flowers, F. W.....	Clerk.....	Oct. 19 to Nov. 6, 1886.....	3.50	Per day.....	59.50	Office of accounts.
Forbes, Thomas.....	Laborer.....	Apr. 1 to June 30, 1887.....	1.50	do.....	103.87	Fish-ponds, Washington, D. C.
Fox, J. C.....	Assistant.....	Oct. 1, 1886, to Jan. 31, 1887.....	50.00	Per month.....	200.00	Alpena, Mich.
Gill, Herbert A.....	Chief division of accounts and disbursing agent.	July 1, 1886, to June 30, 1887.....	2,200.00	Per year.....	2,200.00	
Gillis, Frank R.....	Copyist.....	July 1, 1886, to May 31, 1887.....	25.00	Per month.....	275.00	Division of records.
Goldsmith, J. S.....	Clerk.....	July 1, 1886, to Dec. 31, 1886.....	60.00	do.....	360.00	Division of distribution.
Goldsmith, Z. H.....	Foreman.....	July 1, 1886, to June 30, 1887.....	150.00	do.....	1,800.00	Fish-ponds, Washington, D. C.
Gorham, C. E.....	Civil engineer and draughtsman.	do.....	150.00	do.....	1,800.00	Engineer's office.
Grabill, L. R.....	Assistant.....	July 1, 1886, to Aug. 24, 1886.....	100.00	do.....	177.42	St. Jerome's and Havre de Grace, Md.
Greenland, H. T.....	Spawn-taker.....	Apr. 5 to 30, 1887.....	55.00	do.....	47.66	Fort Washington, Md.
Green, Charles.....	Laborer.....	Aug. 1 to 21, 1886.....	1.25	Per day.....	11.87	Fish-ponds, Washington, D. C.
Green, J. W.....	Distribution messenger.	Nov. and Dec., 1886; May 9 to June 30, 1887.	45.00	Per month.....	155.89	
Green, L. W.....	Station superintendent.....	July 1, 1886, to Feb. 28, 1887.....	120.00	do.....	960.00	Baird, Cal.
Green, Reuben G.....	Laborer.....	Mar. 1 to June 30, 1887.....	100.00	do.....	400.00	Do.
Do.....	do.....	June 1 to 30, 1887.....	55.00	Per month.....	440.00	Do.
Griffin, Charles L.....	Second mate.....	Sept. 6, 1886, to June 30, 1887.....	75.00	do.....	737.50	Schooner <i>Grampus</i> .
Griffiths, George I.....	Cook.....	July 1, 1886, to June 30, 1887.....	39.00	do.....	468.00	St. Jerome's and Havre de Grace, Md.
Grinnell, Oliver.....	Messenger.....	July 12 to Sept. 4, 1887.....	20.00	do.....	23.57	Wood's Holl, Mass.
Groh, Samuel.....	Spawn-taker.....	Nov. 1 to 25, 1886.....	2.00	Per day.....	50.00	Alpena, Mich.
Hall, Joseph.....	Penning fish.....	Oct. 18 to Nov. 23, 1886.....	2.00	do.....	74.00	Lake Erie.
Do.....	Assistant at hatchery.....	Nov. 24, 1886, to Feb. 28, 1887.....	40.00	Per month.....	129.33	Northville, Mich.
Hamlen, William.....	Foreman.....	July, 1886.....	1,000.00	Per year.....	83.33	Havre de Grace, Md.
Do.....	In charge of steamer <i>Halcyon</i>	Aug. 1, 1886, to June 30, 1887.....	1,000.00	do.....	916.67	Do.
Hancock, W. K.....	Messenger.....	July 1, 1886, to June 30, 1887.....	20.00	Per month.....	240.00	Wytheville, Va.
Hare, S. J.....	Night janitor.....	do.....	60.00	do.....	720.00	Central Office.
Harmon, Frank S.....	Clerk.....	Aug. 1, 1886, to June 30, 1887.....	50.00	do.....	550.00	Northville, Mich.
Harmon, J. A.....	Laborer.....	July 1 to Nov. 15, 1886.....	1.50	Per day.....	136.12	Fish-ponds, Washington, D. C.
Harris, Edward.....	Cook.....	July 26 to Aug. 31, 1886; Dec. 1, 1886, to May 31, 1887.	45.00	Per month.....	316.46	Car No. 2.
Harris, Gwynn.....	Temperature observer.....	July 1, 1886, to June 30, 1887.....	15.00	do.....	180.00	Washington, D. C.
Harron, L. G.....	Captain of seine.....	Mar. 21 to May 31, 1887.....	60.00	do.....	142.00	Fort Washington, Md.
Do.....	Repairing nets and boats.....	June 1 to 22, 1887.....	2.00	Per day.....	44.00	Do.
Hayes, Edward.....	Stenographer.....	July 1, 1886, to June 30, 1887.....	150.00	Per month.....	1,800.00	Commissioner's office.
Herdman, C. M.....	Fireman.....	July 1 to Aug. 19, 1886.....	60.00	do.....	96.77	Launch <i>Blue Wing</i> .
Hessel, Rudolph.....	Station superintendent.....	July 1, 1886, to June 30, 1887.....	150.00	do.....	1,800.00	Fish ponds, Washington, D. C.
Hill, William.....	Spawn-taker.....	Nov. 1 to 22, 1886.....	2.00	Per day.....	44.00	Alpena, Mich.

Employer	Employee	Period	Rate	Amount	Remarks
Hopewell, Pinkney	Laborer	Aug. 1 to 31; Oct. 1 to 5; Nov. 1 to 19, 1886.	1.50	33.75	St. Jerome's, Md.
Houston, Giles	do	Aug. 1 to 21, 1886; Feb. 1 to Apr. 30, 1887.	1.50	95.62	Fish-ponds, Washington, D. C.
Houston, Joseph	Cook	July and Aug., 1886.	30.00	60.00	St. Jerome's, Md.
Hugh, Thomas	Laborer	July 1, 1886, to Mar. 31, 1887.	40.00	360.00	Wood's Holl, Mass.
Janson, John	Carpenter	July 1, 1886, to Oct. 31, 1886.	65.00	260.00	Do.
Do.	do	Nov. 1, 1886, to June 30, 1887.	75.00	600.00	Do.
Jerrell, H. P.	Clerk	July 1, 1886, to June 30, 1887.	1,000.00	1,000.00	Division of records.
Johnson, Charles	Laborer	Apr., 1887.	1.50	26.62	Fish-ponds, Washington, D. C.
Johnson, James H.	Janitor	Aug. 1, to Oct. 31, 1886.	62.50	187.50	Wood's Holl, Mass.
Do.	do	Nov. 17 and 18, 1886.	1.50	3.00	Central Office.
Do.	do	June, 1887.	1.50	12.75	Do.
Johnson, R. S.	Distribution messenger	Nov. and Dec., 1886; Apr. 29 to June 15, 1887.	75.00	267.50	Car No. 3.
Johnstone, C. G.	Second mate	July 1 to Aug. 25, 1886.	75.00	135.48	Schooner <i>Grampus</i> .
Jones, George A.	Laborer	Sept. 1, 1886, to Apr. 14, 1887.	55.00	465.67	Wytheville, Va.
Do.	Spawn-taker	Apr. 15 to May 31, 1887.	55.00	84.33	Fort Washington, Md.
Joyce, Sarah	Temperature observer	July 1, 1886, to June 30, 1887.	5.00	60.00	Do.
Keenan, James	Spawn-taker	Apr. 12 to May 31, 1887.	55.00	89.83	Havre de Grace, Md.
Kenly, D. W.	Fish-culturist	July 1, 1886, to June 30, 1887.	60.00	720.00	St. Jerome's and Havre de Grace, Md.; Wood's Holl, Mass.
Kenly, R.	Cook's helper	Apr. 13 to May 10, 1887.	20.00	18.45	Havre de Grace, Md.
Do.	do	May 11 to June 20, 1887.	30.00	40.26	Do.
Kidder, J. H.	Chemist	July 1, 1886, to June 30, 1887.	100.00	1,200.00	Wood's Holl, Mass.
Kimball, C. E.	Carpenter	Sept. 20, 1886, to Jan. 3, 1887.	2.75	74.93	Do.
Koons, B. F.	Laboratory assistant	Aug. 3 to Sept. 3, 1886.	2.50	80.00	Division of records.
Latimer, C. E.	Clerk	July 1, 1886, to June 30, 1887.	55.00	660.00	Laboratory, Wood's Holl, Mass.
Lee, L. A.	Assistant	July 26 to Sept. 16, 1886.	3.00	120.00	Steamer <i>Albatross</i> .
Lee, Thomas	do	July 1 and Aug., 1886.	60.00	120.00	Do.
Do.	Naturalist	Sept. 1 to Oct. 31; Dec. 1, 1886, to June 30, 1887.	100.00	900.00	Do.
Leonard, Timothy	Night watchman	Apr. 13 to May 24, 1887.	50.00	65.70	Fort Washington, Md.
Lewis, C. C.	Distribution messenger	Dec. 1 to 31, 1886; Jan. 8 to June 20, 1887.	45.00	289.85	Car No. 2.
Lewis, R. E.	do	May 20 to 27, 1887.	45.00	11.61	Car No. 3.
Lincoln, Anne C.	Clerk	July 1, 1886, to June 30, 1887.	50.00	600.00	Division of property.
Linton, Edward	Laboratory assistant	July 14 to 31, 1886.	2.50	45.00	Wood's Holl, Mass.
Do.	do	Aug. 1 to Sept. 2, 1886.	3.00	99.00	Do.
Lowden, Henry T.	Assistant at hatchery	Oct. 4 to Nov. 30, 1886.	45.00	60.75	Northville, Mich.
Lucas, E. R.	Distribution messenger	Nov. 1 to Dec. 31, 1886; Jan. 1 to June 20, 1887.	45.00	334.85	Cars Nos. 2 and 3.
Luckett, John F.	Coxswain	July 1 to Aug. 25, 1886.	60.00	108.38	Launch <i>Blue Wing</i> , and Havre de Grace, Md.
Lynch, Richard	In charge Arsenal ponds	July 1, 1886, to June 30, 1887.	15.00	180.00	Washington, D. C.
Mackall, D. B.	Distribution messenger	Nov. and Dec., 1886.	55.00	110.00	Division of distribution.
McDonald, M.	Chief of division	July 1, 1886, to June 30, 1887.	200.00	2,400.00	Schooner <i>Grampus</i> .
McPhee, Peter	Seaman	July and Aug., 1886.	45.00	90.00	Albena, Mich.
Major, M.	Spawn-taker	Nov. 1 to 24, 1886.	2.00	44.00	Office of Commissioner.
Marbury, Ella M.	Clerk	July 1, 1886, to June 30, 1887.	75.00	900.00	Gloucester, Mass.
Martin, S. J.	Watchman and collector	do	50.00	500.00	Cold Spring Harbor, N. Y.
Mather, Fred	Assistant	do	500.00	540.00	Central Station.
Maynard, William	Night watchman	do	45.00		

FISCAL YEAR 1886-'87—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Maxwell, John.....	Machinist.....	Sept. 1, 1886, to June 30, 1887.....	\$100.00	Per month.....	\$1,000.00	Wood's Holl, Mass.
Meek, Seth E.....	Special assistant.....	Sept. 1 to Nov. 30, 1886.....	10.00	do.....	30.00	Scientific inquiry.
Miller, William.....	Spawn-taker.....	Nov. 1 to 24, 1886.....	2.00	Per day.....	48.00	Alpena, Mich.
Morgan, W. H.....	Laborer.....	July 1, 1886, to Mar. 21, 1887.....	40.00	Per month.....	360.00	Central Station.
Do.....	Assistant in hatchery.....	Apr. to May 20, 1887.....	50.00	do.....	82.26	Fort Washington, Md.
Do.....	Laborer.....	May 21 to June 30, 1887.....	50.00	do.....	67.74	Central Station.
Moore, Daniel.....	Scullion.....	Apr. 13 to June 2, 1887.....	25.00	do.....	41.66	Fort Washington, Md.
Moore, George H. H.....	Car captain.....	July 1, 1886, to June 30, 1887.....	100.00	do.....	1,200.00	Car No. 2.
Munson, Heratio.....	Laborer.....	Sept. 21 to Nov. 21, 1886.....	1.50	Per day.....	43.50	Maine stations.
Munson, W. H.....	do.....	Sept. 1, 1886, to Mar. 31, 1887.....	1.75	do.....	290.50	Do.
Murphy, Thomas.....	do.....	July 1, 1886, to June 30, 1887.....	1.50	do.....	540.75	Fish-ponds, Washington, D. C.
Murphy, W. W. J.....	Clerk.....	July 1, 1886, to Sept. 22, 1886.....	110.00	Per month.....	300.66	Office of accounts.
Do.....	do.....	Sept. 23, 1886, to Feb. 4, 1887.....	75.00	do.....	330.71	Do.
Neff, Louis.....	Laborer.....	July 1, 1886, to July 31, 1886.....	1.50	Per day.....	47.62	Fish-ponds, Washington, D. C.
Do.....	do.....	Aug. 1, 1886, to June 30, 1887.....	55.00	Per month.....	550.00	Do.
Nelson, Hewey J.....	Seaman.....	Oct. 1, 1886, to June 30, 1887.....	45.00	do.....	405.00	Schooner <i>Grampus</i> .
Newcomb, R. L.....	Assistant.....	Sept. 20 to Nov. 17, 1886.....	60.00	do.....	116.00	Do.
Nicholson, W. M.....	Spawn-taker.....	Nov. 13 to 22, 1886.....	2.50	Per day.....	25.00	Alpena, Mich.
Obermeyer, Gustave.....	Laborer.....	July 16 to 31, 1886.....	1.25	do.....	6.25	Fish-ponds, Washington, D. C.
Do.....	do.....	Aug. 1, 1886, to Mar. 24, 1887.....	1.50	do.....	299.99	Do.
O'Connor, J. J.....	Clerk.....	July 1, 1886, to June 30, 1887.....	115.00	Per month.....	1,380.00	Division of distribution.
Olmston, Young.....	Laborer.....	July 1, 1886, to May 31, 1887.....	40.00	do.....	440.00	Wood's Holl, Mass.
Osier, Frank.....	Seaman.....	Feb. 2 to June 30, 1887.....	45.00	do.....	223.39	Schooner <i>Grampus</i> .
Page, W. F.....	Superintendent of hatching.....	July 1, 1886, to June 30, 1887.....	100.00	do.....	1,200.00	Central Station.
Palmer, William.....	Modeler.....	do.....	65.00	do.....	780.00	Casts of fishes.
Parker, H. P.....	Copyist.....	do.....	30.00	do.....	360.00	Division of records.
Parker, Peter, jr.....	Assistant.....	Aug. 1, 1886, to Oct. 5, 1886.....	75.00	do.....	862.50	Arrangement of collections.
Parker, Samuel.....	Laborer.....	Oct. 26, 1886, to Jan. 31, 1887.....	1.25	Per day.....	51.75	Fish ponds, Washington, D. C.
Do.....	do.....	July 10, 1886, to Jan. 31, 1887.....	1.50	do.....	47.62	Do.
Partridge, Thomas.....	do.....	Mar. 1 to June 15, 1887.....	1.50	do.....	189.00	Maine stations.
Do.....	do.....	Nov. 1 to 28, 1886.....	15.00	Per month.....	52.50	Do.
Platts, George.....	Spawn-taker.....	Feb. 1 to June 30, 1887.....	2.00	Per day.....	56.00	Alpena, Mich.
Pollard, Richard.....	Laborer.....	Mar. 28 to June 11, 1887.....	1.50	do.....	168.75	Fish-ponds, Washington, D. C.
Posey, T. D.....	Spawn-taker.....	Mar. 26 to Apr. 11, 1887.....	55.00	Per month.....	137.27	Fort Washington, Md.
Pearson, E. E.....	Carpenter.....	do.....	.25	Per hour.....	33.12	Havre de Grace, Md.
Pearson, F. C.....	do.....	Aug. 11, 1886, to June 30, 1887.....	.25	do.....	26.50	Do.
Perry, Charles.....	Seaman.....	Mar. 1 to June 30, 1887.....	45.00	Per month.....	480.48	Schooner <i>Grampus</i> .
Quesenberry, C. R.....	Laborer.....	May 17 to 21, 1887.....	1.50	Per day.....	115.49	Fish-ponds, Washington, D. C.
Quinn, H. E.....	Distribution messenger.....	July 1, 1886, to June 30, 1887.....	3.85	do.....	19.25	Baird, Cal.
Radeliff, Robert.....	Watchman.....	July 1 to Oct. 31, 1886.....	30.00	Per month.....	360.00	Arrangement of collections.
Rathbun, M. J.....	Clerk.....	July 1, 1886, to June 30, 1887.....	40.00	do.....	160.00	Investigations.
Rathbun, R.....	Assistant.....	do.....	2,000.00	Per year.....	2,000.00	

Ravenel, W. de C.	Station superintendent	do	July 1, 1886, to Mar. 31, 1887	100.00	Per month	1,200.00	St. Jerome's and Havre de Grace, Md.
Robinson, E. M.	Fish culturist	do	Apr. and May, 1887	70.00	do	630.00	Wytheville, Va., and Chesapeake Bay.
Do.	Special messenger	do	June, 1887	80.00	do	160.00	Fort Washington, Md., and central station.
Do.	Fish culturist	do	July 1 to Aug. 31, 1886	80.00	do	80.00	Wytheville, Va.
Robinson, Washington	Janitor	do	Sept. 1 to Oct. 16, 1886	60.00	do	120.00	Wood's Holl, Mass.
Do.	do	do	Oct. 17, 1886, to June 30, 1887	62.50	do	94.76	Do.
Do.	do	do	July 1, 1886, to June 30, 1887	60.00	do	501.03	Central offices.
Rockwell, Julia L.	Clerk	do	July 1, 1886, to June 30, 1887	70.00	do	805.00	Division of records.
Rogers, E. I.	Draughtsman	do	July 1 to 5, 1886	2.00	Per day	8.00	Engineer's office.
Do.	Distribution messenger	do	July 26 to Aug. 31, 1886	45.00	Per month	53.71	Car No. 2.
Do.	do	do	Nov. and Dec., 1886	45.00	do	90.00	Do.
Do.	Draughtsman	do	Jan. 1 to June 30, 1887	60.00	do	360.00	Engineer's office.
Rogers, O. V.	Laborer in hatchery	do	July 1 to Aug. 31, 1886	1.25	Per day	77.50	Cold Spring Harbor, N. Y.
Do.	do	do	Nov. 1, 1886, to May 31, 1887	1.50	do	225.00	Do.
Root, M. S.	Foreman	do	July 1, 1886, to June 30, 1887	75.00	Per month	900.00	Northville, Mich.
Royster, J. H.	Distribution messenger	do	May 9 to June 15, 1887	45.00	do	55.87	Schooner <i>Grampus</i> .
Ryder, Augustus	Seaman	do	Sept. 28, 1886, to June 30, 1887	45.00	do	439.50	Wood's Holl, Mass.
Ryder, John A.	Acting station superintendent	do	July 1, 1886, to Oct. 16, 1886	150.00	do	525.00	Northville, Mich.
Sanders, John	Spawntaker	do	Nov. 10 to 26, 1886	2.50	Per day	42.50	Dredging, Havre de Grace, Md.
Sanders, W. F.	Dipper tender	do	Feb. 21 to Apr. 30, 1887	2.00	do	111.50	Do.
Do.	Runner	do	May 2 to 6, 1887	2.50	do	10.00	Do.
Do.	do	do	May 27 to June 8, 1887	.30	Per hour	54.60	Do.
Do.	Laborer	do	May 6 to 27, 1887	40.00	Per month	27.09	Do.
Sauerhoff, W. P.	Fish culturist	do	July 1, 1886, to June 30, 1887	75.00	do	900.00	St. Jerome's and Havre de Grace, Md.
Sauerhoff, W. R.	Machinist	do	Feb. 1 to June 30, 1887	80.00	do	400.00	Steamer <i>Halcyon</i> .
Scudler, Charles W.	Clerk	do	July 1, 1886, to June 30, 1887	90.00	do	1,080.00	Division of records.
Seagle, George A.	Station superintendent	do	do	75.00	do	900.00	Wytheville, Va.
Seal, W. P.	Aquaria expert	do	July 28 to Oct. 29, 1887	150.00	do	459.67	Wood's Holl, Mass.
Seitz, M.	Spawntaker	do	Nov. 10 to 25, 1886	2.50	do	40.00	Northville, Mich.
Shorter, H. B.	Cook	do	Mar. 31 to June 3, 1887	40.00	Per day	85.29	Fort Washington, Md.
Shorter, William	Night watchman	do	May 9 to June 30, 1887	15.00	Per month	26.13	General office.
Shuster, E. Harry	Clerk	do	July 1, 1886, to Feb. 28, 1887	60.00	do	480.00	Steamer <i>Albatross</i> .
Simmons, C. F.	Car captain	do	July 1, 1886, to June 30, 1887	100.00	do	1,200.00	Car No. 1.
Simms, Isaac	Cook	do	Nov. 27, 1886, to June 30, 1887	30.00	do	214.00	Havre de Grace, Md.
Slaght, Isaac	Assistant	do	Oct. 16, 1886, to Jan. 31, 1887	50.00	do	175.00	Northville, Mich.
Smiley, Charles W.	Chief of division	do	July 1, 1886, to June 30, 1887	2,000.00	Per year	2,000.00	Division of records.
Smilie, T. W.	Photographer	do	do	150.00	Per month	1,800.00	Office of Commissioner.
Smith, A. W., Miss	Clerk	do	July 1, 1886, to June 30, 1887	45.00	do	540.00	Division of accounts.
Smith, Hugh M.	do	do	do	50.00	do	600.00	Preparation of statistics.
Smith, John	Car cook	do	Dec. 1886; Apr. 29 to June 16, 1887	45.00	do	117.00	Car No. 3.
Smith, Nellie E.	Cook	do	Sept. 11 to Oct. 21, 1886	30.00	do	50.00	Wood's Holl, Mass.
Smith, Sanderson	Laboratory assistant	do	July 16 to Nov. 30, 1886	125.00	do	564.52	Do.
Smith, S. I.	do	do	Aug. 7 to Sept. 7, 1887	125.00	do	129.98	Do.
Snell, Merwin P.	Clerk	do	July 1, 1886, to June 30, 1887	50.00	Per month	600.00	Preparation of statistics.
Solvin, Anders	Laborer	do	June 16 to 20, 1886	40.00	do	20.00	Wood's Holl, Mass.
Stevens, C. L.	Distribution messenger	do	May 6 to June 15, 1887	60.00	do	80.32	
Stewart, C. A.	do	do	May 6 to 31, 1887	100.00	do	83.87	
Stimpson, Mrs. A. L.	Care taker of offices	do	July 1, 1886, to June 30, 1887	20.00	do	240.00	General office.
Stoerzer, Albert J.	Office messenger	do	do	20.00	do	240.00	Do.
Stone, Livingston	Station superintendent	do	do	500.00	Per year	500.00	California stations.

FISCAL YEAR 1886-'87—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Stromberger, H. H.	Captain's clerk	April 1 to June 30, 1887	\$60.00	Per month	\$180.00	Steamer <i>Albatross</i> .
Taft, F. M.	Engineer	Nov., 1886 to Mar. 31, 1887	45.00	do	225.00	Northville, Mich.
Terrell, L. D.	Clerk	Aug., 1886	25.00	do	25.00	Division of distribution.
Do	do	Sept. 1, 1886, to June 30, 1887	60.00	do	600.00	Do.
Timbers, Robert	Watchman	July 1, 1886, to June 19, 1887	45.00	do	523.50	Central station.
Do	Janitor	June 20 to 30, 1887	45.00	do	16.50	Wood's Holl, Mass.
Tindall, John	Carpenter and spawn-taker	Nov. 1 to 25, 1886	2.00	Per day	50.00	Alpena, Mich.
Todd, James	Spawn-taker	April 13 to May 31, 1887	55.00	Per month	88.00	Havre de Grace, Md.
Tolbert, George H.	Fish culturist	July 1, 1886, to Dec. 31, 1886	65.00	do	390.00	St. Jerome's and Havre de Grace, Md., and Wood's Holl, Mass.
Do	do	Jan. 1 to June 30, 1887	75.00	do	450.00	Havre de Grace and schooner <i>Grampus</i> .
Townsend, Charles H.	Assistant	July 1, 1886, to June 30, 1887	60.00	do	720.00	In the field and headquarters.
Traylor, James G.	Clerk	do	100.00	do	1,200.00	Office chief assistant.
Tulian, E. A.	Watchman	Sept. 1 to 17, 1886	20.00	do	11.33	Alpena, Mich.
Do	Assistant at hatchery	Oct. 1, 1886, to May 25, 1887	50.00	do	390.32	Do.
Tune, M. N.	Office messenger	July 1, 1886, to June 30, 1887	40.00	do	480.00	Central office.
Undutch, William	Engineer	Feb. 21 to April 30, 1887	3.00	Per day	160.50	Dredging, Havre de Grace, Md.
Verrill, A. E.	Assistant	July 1, 1886, to June 30, 1887	125.00	Per month	1,500.00	Investigations, New Haven, Conn.
Walsh, Joseph	Clerk	July 22 to Oct. 20, 1887	40.00	do	118.70	Wood's Holl, Mass.
Walters, C. H.	Assistant in hatchery	Nov., 1886; Jan. 1 to May 22, 1887	1.75	Per day	246.75	Cold Spring Harbor, N. Y.
Warwick, Bert	Spawn-taker	Nov. 1 to 29, 1886	2.00	do	56.00	Alpena, Mich.
Warwick R. T.	Distribution messenger	July 26, Aug. 31, 1886, Nov. and Dec., 1886	45.00	Per month	143.71	Cars Nos. 1 and 2.
Watkins, Thomas	Janitor	July 1 to Oct. 21, 1886	67.50	do	248.22	Wood's Holl, Mass.
Do	Laborer	Oct. 22, 1886, to June 30, 1887	40.00	do	332.90	Washington, D. C.
Wight, Daniel E.	Guarding salmon (night)	July 1 to Oct. 31, 1886	20.00	do	80.00	Maine stations.
Do	Laborer	Sept. 15 to Nov. 15, 1886	1.50	Per day	42.75	Do.
Wilcox, W. A.	Assistant	July 1, 1886, to June 30, 1887	50.00	Per month	600.00	Statistics.
Wilkins, Clinton	Office messenger	July 16 to 31, 1886	20.00	do	10.32	Chief assistant's office.
Williams, George W.	Machinist	July 1 to Oct. 15, 1886	80.00	do	278.70	Schooner <i>Grampus</i> .
Willie, Indian	Laborer	July 5 to 10, 1886	1.00	Per day	6.00	Baird, Cal.
Do	do	Aug. 15 to 31, 1886	50.00	Per month	25.00	Do.
Do	do	Sept., 1886	40.00	do	40.00	Do.
Wills, Homer	do	July 1, 1886 to June 30, 1887	1.25	Per day	273.55	Fish-ponds, Washington, D. C.
Wilson, Henry	Cook	June 1 to 20, 1887	45.00	Per month	30.00	Car No. 2.
Wilson, J. Paul	Chief of division	July 1, 1886, to June 30, 1887	2,000.00	Per year	2,000.00	Alpena, Mich.
Wires, S. P.	Watchman	July and Aug., 1886	20.00	Per month	40.00	Do.
Do	Foreman	Sept. 11, 1886, to May 25, 1887	75.00	do	660.48	Do.
Do	Watchman	May 26 to June 20, 1887	20.00	do	23.87	Do.
Worth, S. G.	Distribution messenger	Apr. 19 to June 30, 1887	60.00	do	144.00	St. Jerome's, Md.
Wrightson, J. B.	Watchman	Nov. 21, 1886, to June 30, 1887	15.00	do	110.00	

Yeatman, P. T.	Messenger.	Apr. 16 to May 31, 1887.	55.00	Per month.	82.50	Ft. Washington, Md.; Central Station.
Allister, Wm. F.	Draughtsman	Nov. 1 to Dec. 11, 1886	60.00	do	81.28	Wood's Holl, Mass.
Bannon, L.	Engineer	Aug. 7 to 24, 1886	3.25	Per day	43.87	Havre de Grace, Md.
Banks, Preston	Laborer	Nov. 22 and 23, 1886	1.50	do	3.00	Fish-ponds, Washington, D. C.
Barber, John	do	do	1.50	do	3.00	Do.
Barber, A. J.	do	Oct. 1 to 18, 1886	1.50	do	27.00	Do.
Barnes, Wm. H.	Carpenter	Mar. 15, Mar. 26 to Apr. 11, 1887.	.25	Per hour	28.37	Havre de Grace, Md.
Bartram, James	Laborer	Oct. 4 and 5, 1886	1.50	Per day	3.00	Northville, Mich.
Bennett, W. H.	Mechanic	Jan. 5 and 6, 1887.	3.00	do	4.50	Fish-ponds, Washington, D. C.
Bennitt, George	Laborer	Aug. 21 to 31, Oct. 5, 1886	1.50	do	9.00	St. Jerome's, Md.
Bedore, Paul	do	Nov. 15 to 17, 1886	1.50	do	3.75	Alpena, Mich.
Bgold, Sam	Spawn-taker	Dec. 2 to 13, 1886	2.00	do	24.00	Do.
Black, W. H.	do	Nov. 14 to 17, 1886	2.50	do	10.00	Northville, Mich.
Bourne, Timothy	Carpenter	Sept. 20 to 30, 1886	2.75	do	16.50	Wood's Holl, Mass.
Braund, W. H.	Special watchman	May 23 to 31, 1887	2.00	do	18.00	Fish-ponds, Washington, D. C.
Braney, Patrick	Laborer	Nov. 4 to 13, 1886	1.60	do	14.00	Wood's Holl, Mass.
Brick, Lewis	Spawn-taker	Nov. 19 to 21, 1886	2.50	do	5.00	Northville, Mich.
Briggs, C. A.	Carpenter	Sept. 20 to Oct. 13, 1886	2.75	do	31.62	Wood's Holl, Mass.
Brown, W. J.	Special watchman	May 22 to 31, 1887	2.00	do	20.00	Fish-ponds, Washington, D. C.
Buchanan, Joseph	Laborer	Nov. 1 to 15, 1886	1.50	do	7.12	Do.
Burdick, C. H.	Carpenter	Sept. 20 to Oct. 13, 1886	4.00	do	56.00	Wood's Holl, Mass.
Byington, L. W.	Spawn-taker	Nov. 14 to 23, 1886	2.50	do	15.00	Northville, Mich.
Cahill, Michael	Laborer	Sept. 9 and 10, 1886	1.50	do	3.00	Wood's Holl, Mass.
Callahan, Dennis	do	Sept. 3 to 11, 1886	1.50	do	11.25	Do.
Carlin, J. E. F.	Watchman	May 22 to 31, 1887	2.00	do	20.00	Fish-ponds, Washington, D. C.
Carter, Wallace	Laborer	Nov. 1 to 15, 1886	1.50	do	13.87	Do.
Caster, S. K.	Special watchman	May 22 to 31, 1887	2.00	do	18.00	Do.
Chaney, S. G.	do	May 23 to 31, 1887	2.00	do	17.50	Do.
Check, Henry	Laborer	Aug. 1 to Sept. 15, 1886	1.25	do	28.35	Central Station.
Cheaney, A. D.	Carpenter	Dec. 4 to 8 and 22 to 30, 1886	3.00	do	2.50	Fish-ponds, Washington, D. C.
Coleman, Joseph	Laborer	Aug. 1 to 15, 1886	1.25	do	6.25	Do.
Coleman, Henry	do	do	1.25	do	22.50	Great Falls, Md.
Collier, H. L.	do	June 15 to 30, 1887	1.50	do	4.50	Alpena, Mich.
Contur, Peter	do	Nov. 15 to 17, 1886	1.50	do	1.12	Fish-ponds, Washington, D. C.
Crawford, George	do	Nov. 1 to 15, 1886	1.50	do	16.00	Do.
Cross, R. T.	Special watchman	May 24 to 31, 1887	2.00	do	26.00	Wood's Holl, Mass.
Covle, Daniel	Laborer	Oct. 26 to Nov. 13, 1886	1.60	do	10.00	Northville, Mich.
Cullen, Chas	Spawn-taker	Nov. 14 to 17, 1886	2.50	do	3.00	Fish-ponds, Washington, D. C.
Day, Lacey	Laborer	Nov. 22 and 23, 1886	1.50	do	2.25	Havre de Grace, Md.
Day, James	do	Aug. 21 to 24, 1886	1.50	do	30.00	Alpena, Mich.
Dodge, L. C.	Spawn-taker	Nov. 11 to 22, 1886	2.50	do	10.00	Northville, Mich.
Downing, S. W.	do	Aug. 1 to Sept. 3, 1886	2.50	do	93.00	Do.
Do	do	Oct. 31 to Nov. 30, 1886	3.00	do	11.35	Do.
Downer, Julia	Picking eggs and moss	Oct. 8 to 23, 1886	22.00	Per month	.75	Do.
Do	do	Jan. 10, 1887	.75	Per day	14.00	Alpena, Mich.
Duffy, W. J.	Spawn-taker	Nov. 14 to 20, 1886	2.00	do	9.37	Wood's Holl, Mass.
Duggan, Jerry	Laborer	Sept. 6 to 13, 1886	1.50	do	20.00	Fish-ponds, Washington, D. C.
Edelin, W. Z.	Special watchman	May 22 to 31, 1887	2.00	do	18.00	Do.
Elliot, J. M.	do	May 22 to 30, 1887	2.00	do	10.00	Northville, Mich.
Enner, Homer L.	Spawn-taker	Nov. 14 to 17, 1886	2.50	do	12.50	Fish-ponds, Washington, D. C.
Farley, Robert	Laborer	Aug. 1 to 21, 1886	1.25	do	16.00	Do.
Ferguson, R. S.	Special watchman	May 23 to 30, 1887	2.00	do		

FISCAL YEAR 1886-'87—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Flanagan, Pat	Spawn-taker	Dec. 6 to 13, 1886	\$2.00	Per day	\$16.00	Northville, Mich.
Flaherty, D.	Laborer	Aug. 7 to 24, 1886	2.00	do	27.00	Havre de Grace, Md.
Forbes, Leonard	do	Sept. 17 to Oct. 6, 1886	1.25	do	18.13	Maine stations.
Fox, Simon	Spawn-taker	Nov. 13 to 17, 1886	2.50	do	12.50	Northville, Mich.
Fox, Frank	do	Nov. 11 to 23, 1886	2.50	do	20.00	Do.
Foxwell, William C.	Laborer	Aug. 7, 1886	1.50	do	1.50	St. Jerome's, Md.
Frier, George	Spawn-taker	Nov. 14 to 16, 1886	2.00	do	6.00	Alpena, Mich.
Gage, Ida	Picking eggs	Oct. 13 to 23, 1886; Jan. 11 to Feb. 18, 1887.	22.00	Per month	16.85	Northville, Mich.
Galewood, Jonah	Laborer	Aug. 1 to 21, 1886	1.25	Per day	12.50	Fish-ponds, Washington, D. C.
Do.	do	Nov. 16 to Dec. 15, 1886	1.50	do	8.25	Do.
Gilchrist, Walker	do	Nov. 1 to 15, 1886	1.50	do	4.50	Do.
Grindie, Joseph H.	do	Oct. 26 to Nov. 15, 1886	1.50	do	15.00	Maine stations.
Hall, W. G.	Special watchman	May 24 to 31, 1887	2.00	do	16.00	Fish-ponds, Washington, D. C.
Hallock, George W.	Spawn-taker	Nov. 10 to 26, 1886	2.50	do	32.50	Northville, Mich.
Harriman, E. A.	Laborer	July 1 to 9, 1886	1.25	do	10.62	Maine stations.
Harriman, I. P.	do	July 1 to 3, 1886	45.00	Per month	4.35	Do.
Heaton, C. H.	Spawn-taker	Nov. 14 to 17, 1886	2.50	Per day	10.00	Northville, Mich.
Henning, A.	do	Nov. 11 to 17, 1886	2.50	do	12.50	Do.
Hering, George, jr.	do	Nov. 11 to 23, 1886	2.50	do	15.00	Do.
Hosford, Charles	do	Nov. 15 to 24, 1886	2.50	do	25.00	Do.
Hunter, James B.	do	Nov. 1 to 25, 1886	2.00	do	50.00	Alpena, Mich.
Hurkett, Oscar	do	Dec. 2 to 13, 1886	2.00	do	24.00	Northville, Mich.
Jeff, Indian	Laborer	Sept. 1 to 15, 1886	40.00	Per month	20.00	Baird, Cal.
Do.	do	Oct. 1 to 24, 1886	1.25	Per day	30.00	Do.
Johnson, Nelson	do	Aug. 23 to 31, 1886	1.50	do	6.00	St. Jerome's, Md.
Johnson, Albert	Spawn-taker	Nov. 13 to 25, 1886	2.50	do	25.00	Northville, Mich.
Johnson, John	do	Nov. 10 to 22, 1886	2.50	do	32.50	Do.
Jones, Thornton L.	Laborer	Aug. 1 to 21, 1886	1.25	do	12.50	Fish-ponds, Washington, D. C.
Khoiler, Jos.	Spawn-taker	Dec. 6 to 13, 1886	2.00	do	16.00	Northville, Mich.
Kline, Isalah.	Laborer	Feb. 1 to 16, 1887	1.00	do	9.50	Wytheville, Va.
Lane, George	do	Sept. 4 to 10, 1886	1.50	do	9.00	Wood's Holl, Mass.
Lane, John E.	Special watchman	May 23 to 31, 1887	2.00	do	18.00	Fish-ponds, Washington, D. C.
Lanahan, John	Laborer	Sept. 15 to 18, 1886	1.50	do	5.25	Wood's Holl, Mass.
Livingston, James	do	Dec. 16 to 31, 1886; Jan. 1 to 8, 1887	3.00	do	28.50	Fish-ponds, Washington, D. C.
Lixey, Joseph	Spawn-taker	Nov. 10 to 12, 1886	2.00	do	6.00	Alpena, Mich.
Martin, James	Laborer	Nov. 1 to 15, 1886	1.50	do	11.25	Fish-ponds, Washington, D. C.
Maxfield, Willis H.	Spawn-taker	Nov. 14 to 23, 1886	2.50	do	10.00	Northville, Mich.
Miller, George	Laborer	May 20 to 28, 1887	1.50	do	13.50	Central Station.
Molynaux, H.	Spawn-taker	Nov. 15 to 20, 1886	2.50	do	15.00	Northville, Mich.
Morris, Preston	Laborer	Aug. 1 to 21, 1886	1.25	do	12.50	Fish-ponds, Washington, D. C.
Munson, Stephen H.	Night watchman	Oct. 28 to 31, 1886	1.10	Per night	4.40	Maine stations.

Do.	Watchman	Nov. 19, 1886	1.25	Per day	1.25	Do.
Do.	do	Nov. 1 to 20, 1886	1.10	do	19.80	Do.
Nagle, Patrick	Laborer	Oct. 2 to 8, 1886	1.50	do	8.25	Wood's Holl, Mass.
O'Brien, Daniel O.	do	July 14 to 16, 1886	1.75	do	5.25	Do.
O'Donnell, Henry	Night watchman	May 4 to 8, 1887	55.00	Per month	8.87	Central Station.
O'Neil, Warren	Cook's assistant	May 10 to 31, 1887	20.00	do	14.19	Havre de Grace, Md.
Partridge, George H.	Laborer	Sept. 6 to 14, 1886	1.25	Per day	8.75	Maine stations.
Partridge, Frank W.	do	do	1.00	do	6.50	Do.
Reed, James	Watchman	Nov. 9 to 30, 1886	1.50	do	33.00	Alpena, Mich.
Ridgway, E. W.	Laborer	Sept. 16 to 30, 1886	1.50	do	5.25	Fish-ponds, Washington, D. C.
Riley, John W.	do	June 4 to 8, 1887	1.50	do	6.00	Havre de Grace, Md.
Riordan, Timothy	do	Sept. 3 to 30, 1886	1.50	do	31.50	Wood's Holl, Mass.
Roberts, Joseph E.	Carpenter	Aug. 2 to 4, 5 to 11, 1886	3.00	do	25.50	Fish-ponds, Washington, D. C.
Do.	Laborer	Aug. 2 to 11, 1886	1.25	do	1.87	Do.
Samuel, Robert	do	Mar. 16 to Apr. 30, 1887	1.50	do	34.87	Do.
Sanford, C. T.	do	Oct. 2 to 9, 1886	1.50	do	10.50	Do.
Seagle, James B.	Carpenter	Apr. 20 to 23, 1887	1.75	do	5.25	Wytheville, Va.
Shanasy, W. J.	Special watchman	May 23 to 30, 1887	2.00	do	16.00	Fish-ponds, Washington, D. C.
Shaw, Edward	Laborer	Oct. 1 to 31, 1886	1.50	do	24.00	Do.
Shea, William	do	Nov. 1 to 15, 1886	1.50	do	19.50	Do.
Shorter, William	do	July 1 to 3, Aug. 1 to 31, Oct. 5, 1886	1.50	do	18.50	St. Jerome's, Md.
Sifield, Rudolph	Spawn-taker	Nov. 14 to 17, 1886	2.50	do	10.00	Northville, Mich.
Spencer, William	Laborer	Aug. 17 to 28, 1886	1.50	do	12.75	Wood's Holl, Mass.
Stafford, William	do	July 1 to 17, 1886	1.50	do	25.50	Baird, Cal.
Starkey, George	do	July 1 to 24, 1886	1.25	do	20.62	Fish-ponds, Washington, D. C.
Stone, John H.	Carpenter	Mar. 30 to Apr. 11, 1887	.25	Per hour	22.25	Havre de Grace, Md.
Stone, John	Spawn-taker	Nov. 10 to 24, 1886	2.50	Per day	37.50	Northville, Mich.
Stuart, Harry	Carpenter	Sept. 20 to Oct. 11, 1886	2.75	do	13.75	Wood's Holl, Mass.
Sweeney, Edward	Laborer	Sept. 3 to 30, 1886	1.50	do	31.50	Do.
Taylor, Irwin S.	do	Oct. 4 to 9, 1886	1.50	do	8.25	Fish-ponds, Washington, D. C.
Thomas, William	do	Nov. 1 to 15, 1886	1.50	do	13.87	Do.
Do.	do	Mar. 11 to 15, Apr. 25 and 26, 1887	4.00	do	28.00	Do.
Thomas, James	do	Oct. 4 to 6, 1886	1.50	do	3.75	Northville, Mich.
Toumey, Michael	do	Sept. 9 and 10, 1886	1.50	do	3.00	Wood's Holl, Mass.
Treece, George	do	July 1 to 9, 16 to 31, Aug. 1 to 31, 1886	1.25	do	50.00	Fish-ponds, Washington, D. C.
Tucker, Arnold	do	July 1 to 3, 1886	1.50	do	3.75	St. Jerome's, Md.
Tutt, Burket	do	Nov. 22 and 23, 1886	1.50	do	3.00	Fish-ponds, Washington, D. C.
Vaughn, Carl	Spawn-taker	Nov. 21 to 30, 1886	2.00	do	12.00	Alpena, Mich.
Warwick, Edward	Laborer	Nov. 1 to 15, 1886	1.25	do	3.75	Fish-ponds, Washington, D. C.
Welch, L. P.	Spawn-taker	Nov. 14 to 24, 1886	2.50	do	20.00	Northville, Mich.
Wilcox, Ella	Picking eggs and moss	Oct. 8 to 21, 1886; Jan. 11 to 25, 1887	22.00	Per month	20.58	Do.
Wight, Charles A.	Laborer	Oct. 18 to Nov. 15, 1886	1.50	Per day	26.25	Maine stations.
Wight, Clarence A.	do	Oct. 26 to 31 and Nov. 1 to 5, 1886	1.50	do	15.00	Do.
Williams, William	do	May 2 to 5, 1887	2.00	do	6.00	Do.
Do.	do	May 27 to June 8, 1887	.20	Per hour	35.40	Do.
Wilson, William	do	July 1 to 3, Aug. 21 to 31, 1886	1.50	Per day	11.25	St. Jerome's, Md.
Wires, George, jr.	Spawn-taker	Nov. 12 to 23, 1886	2.50	do	20.00	Northville, Mich.
Wires, William	do	Nov. 14 to 23, 1886	2.50	do	15.00	
					120,594.69	

FISCAL YEAR 1887-'88.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Abbott, W. H.	Clerk.	July 1, 1887, to June 11, 1888.	\$50.00	Per month.	\$568.33	Statistical inquiry.
Addison, A. C.	do	July 1, 1887, to June 30, 1888.	110.00	do	1,320.00	Office of accounts
Alexander, A. B.	Ship's writer.	July 1, 1887, to May 31, 1888.	60.00	do	660.00	Schooner <i>Grampus</i> .
Do.	Fishery expert.	June 1 to 30, 1888.	90.00	do	90.00	Steamer <i>Albatross</i> .
Atkins, Charles G.	Station superintendent.	July 1, 1887, to Apr. 30, 1888.	200.00	do	2,000.00	Wood's Holl and Maine stations.
Do.	do.	May 1 to June 30, 1888.	152.00	do	300.00	Maine stations.
Atwater, W. O.	Specialist.	July 1, 1887, to Mar. 31, 1888.	50.00	do	450.00	Report on chemistry of fish.
Baldwin, A. H.	Assistant.	July 1, 1887, to Oct. 27, 1887.	75.00	do	290.32	Arrangement of collections.
Barber, N. J.	Laborer.	Apr. 1 to 17, 1887.	1.00	Per day.	17.00	Baird, Cal.
Do.	do.	Nov. 1 to 22, 1887.	1.50	do	33.00	Do.
Barbour, S. S.	Steward.	July 1, 1887, to June 30, 1888.	50.00	Per month.	600.00	Schooner <i>Grampus</i> .
Barry, Patrick.	Laborer.	do	40.00	do	480.00	Wood's Holl, Mass.
Bartlett, L. de F.	Clerk.	June 26 to 30, 1888.	60.00	do	10.00	Steamer <i>Albatross</i> .
Baur, J. P.	Laborer.	July 23 to 27, 1887.	1.50	Per day.	6.00	Fish ponds, Washington, D. C.
Do.	do.	August 12 to Oct. 11, 1887.	45.00	Per month.	90.00	Central station.
Do.	Distribution messenger.	Nov. 12, 1887, to Feb. 28, 1888.	45.00	do	141.77	Car No. 1.
Do.	Spawn-taker.	Apr. 1 to June 13, 1888.	55.00	do	133.83	Fort Washington, Md.
Baxter, D.	Pilot.	July 20 to Aug. 31, 1887.	60.00	do	83.23	Schooner <i>Grampus</i> .
Bean, T. H.	Ichthyologist.	July 1 to Nov. 30, 1887.	166.66	do	833.30	
Do.	do.	Dec. 1, 1887, to June 30, 1888.	175.00	do	1,225.00	
Bechtel, Charles.	Laborer.	Apr. 1 to May 31, 1888.	45.00	do	90.00	Central station.
Bennett, W.	Inspector of boilers.	Jan. 18 to Apr. 30, 1888.	110.00	do	379.68	Repairs steamer <i>Fish Hawk</i> .
Bery, C. E.	Seaman.	Oct. 6, 1887, to June 30, 1888.	45.00	do	397.75	Schooner <i>Grampus</i> .
Billy, Indian.	Laborer.	Nov. 1 to Dec. 31, 1887; Jan., 1888.	25.00	do	75.00	Baird, Cal.
Blake, J. Henry.	Draughtsman.	Aug. 1 to 30, 1887.	5.00	Per day.	150.00	Wood's Holl, Mass.
Blaselman, B. L.	Distribution messenger.	May 1 to June 11, 1888.	45.00	Per month.	51.34	
Bower, Seymour.	Foreman of station.	July 1, 1887, to June 30, 1888.	125.00	do	1,500.00	Northville, Mich.
Bowser, James A.	Cook.	Sept. 14 to 30, 1887.	45.00	do	25.50	Car No. 1.
Do.	do.	Nov. 22 to Dec. 20, 1887.	45.00	do	42.53	Car No. 3.
Do.	do.	May 1 to 31, and June 12 to 30, 1888.	45.00	do	73.50	Car No. 1.
Bradley, Ella.	Picking eggs.	Nov. 1 to Dec. 31, 1887; Feb. 1 to 29, 1888.	.75	Per day.	55.87	Northville, Mich.
Briggs, Leander.	Seaman.	Oct. 4, 1887, to June 30, 1888.	45.00	Per month.	400.65	Schooner <i>Grampus</i> .
Brittain, W. H.	Office messenger.	July 1, 1887, to June 30, 1888.	25.00	do	300.00	Office of distribution.
Brown, J. E.	Store keeper.	Jan. 1, 1888, to June 30, 1888.	100.00	do	600.00	Distribution property.
Bryan, E. C.	Clerk.	July 1 to Aug. 20, 1887.	42.00	do	69.10	Office of Commissioner.
Do.	do.	Oct. 1, 1887, to May 31, 1888.	65.00	do	520.00	Do.
Buck, H. H.	Fish culturist.	June, 1888.	75.00	do	75.00	Maine stations.
Buck, W. O.	do.	Aug. 1, 1887, to Apr. 30, 1888.	75.00	do	236.64	Do.

Bush, C. E. (Miss)	Clerk	July 1, 1887, to June 30, 1888	40.00	do	480.00	Arrangement of collections, New Haven, Conn.
Bush, K. J. (Miss)	Assistant	do	45.00	do	540.00	Do.
Butler, George E.	Office messenger and janitor	do	45.00	do	540.00	Offices of Commissioner and of accountants.
Campbell, J. B.	Laborer	Feb. 1 to Apr. 30, 1888	50.00	do	150.00	Baird, Cal.
Carswell, James	Expert fish-culturist	July 1, 1887 to Dec. 31, 1887	100.00	do	600.00	Statistics of fisheries, Chesapeake Bay.
Center, H. R.	Clerk	Nov. 1 to 30, 1887	40.00	do	40.00	Preparation of statistics.
Do	do	Dec. 1, 1887, to June 30, 1888	50.00	do	350.00	Do.
Clark, Frank N.	Station superintendent	July 1, 1887, to June 30, 1888	2,200.00	Per annum	2,200.00	Michigan stations.
Clark, G. F.	Spawn-taker	Apr. 21 to 30, 1888	55.00	Per month	18.33	Havre de Grace, Md.
Do	Assistant in hatchery	May 1 to June 6, 1888	60.00	do	72.00	Do.
Cleaveland, D. H.	Watchman	July 1 to Aug. 22, 1887	35.00	do	59.84	Wood's Holl, Mass.
Cole, Dennis M.	Preparator	Nov. 15, 1887, to May 20, 1888	50.00	do	309.99	Steamer <i>Albatross</i> .
Collins, D. E.	First mate	July 1, 1887, to June 30, 1888	115.00	do	1,380.00	Schooner <i>Grampus</i> .
Collins, George W.	Seaman	July 1, 1887, to June 30, 1888	45.00	do	540.00	Do.
Collins, J. W.	Captain	July 1, 1887, to Oct. 13, 1887	150.00	do	512.95	Do.
Do	Assistant	Oct. 14 to 31, 1888	150.00	do	87.05	Preparing reports; also director of <i>Grampus</i> .
Do	do	Nov. 1, 1887, to May 23, 1888	166.66	do	1,123.61	Do.
Do	Assistant in charge	May 24 to 30, 1888	183.33	do	47.31	Division of fisheries.
Do	do	June, 1888	200.00	do	200.00	Do.
Collins, Lillian M.	Copyist	Oct. 1 to Dec. 31, 1887	40.00	do	120.00	Report operations of schooner <i>Grampus</i> .
Conley, Frank S.	Second mate	Mar. 31 to June 30, 1888	55.00	do	166.77	Schooner <i>Grampus</i> .
Conway, W. L.	Watchman and laborer	July 1, 1887, to June 30, 1888	45.00	do	540.00	Fish-ponds, Monument lot.
Corridon, J. J.	Clerk	July 1, 1887, to Oct. 31, 1887	100.00	do	400.00	Office of accounts.
Do	do	Nov. 1, 1887, to Feb. 29, 1888	100.00	do	400.00	Office of Commissioner.
Do	do	Mar. 1, 1888, to June 30, 1888	100.00	do	400.00	Office of fish culture.
Crawford, James	Night engineer and watchman	Nov. 16, 1887, to Feb. 29, 1888	45.00	do	157.50	Northville, Mich.
Do	Laborer	Oct. 7 to 10, 1887	1.50	Per day	4.50	Do.
Curtin, Thomas	do	July 1, 1887, to June 30, 1888	55.00	Per month	660.00	Fish-ponds, Washington, D. C.
Dana, Richard	Distribution messenger	Oct. 17, 1887, to Dec. 24, 1887	60.00	do	135.48	Gloucester, Mass.
Do	Assistant in hatchery	Dec. 25, 1887, to Apr. 30, 1888	60.00	do	253.55	Do.
Do	Distribution messenger	May 1 to June 12, 1888	60.00	do	84.00	Wood's Holl, Mass.
Do	Assistant	June 13 to 30, 1888	60.00	do	36.00	Fort Washington, Md.
Davis, L.	Seine-mender	Apr. 1 to May 31, 1888	60.00	do	120.00	Northville, Mich.
Dean, H. D.	Assistant in hatchery	July 1, 1887, to Apr. 30, 1888	50.00	do	500.00	Do.
Do	Foreman	May 1 to June 30, 1888	75.00	do	150.00	Fish-ponds, Washington, D. C.
Dickerson, William	Laborer	July 1, 1887, to Feb. 15, 1888	1.50	Per day	351.00	Do.
Do	do	Feb. 16, 1888, to June 30, 1888	45.00	Per month	201.72	Do.
Donnelly, F. L.	Distribution messenger	Apr. 15 to June 30, 1888	75.00	do	190.00	Northville, Mich.
Downing, S. W.	Spawn-taker	Oct. 25 to Dec. 14, 1887	2.00	Per day	102.00	Fish-ponds, Washington, D. C.
Dunnington, W. A.	Assistant to engineer	Aug. 12 to Sept. 12, 1887	2.50	do	70.00	Cars Nos. 1 and 2.
Do	Distribution messenger	Sept. 13, 1887, to Jan. 15, 1888	75.00	Per month	306.26	Car No. 2.
Do	do	Mar. 14 to June 30, 1888	75.00	do	268.55	Statistical inquiry.
Earll, R. E.	Assistant	July 1, 1887, to Aug. 31, 1887	150.00	do	300.00	Do.
Do	do	Sept. 1, 1887, to Oct. 31, 1887	166.66	do	333.32	Do.
Do	do	Nov. 1, 1887, to June 15, 1888	183.33	do	1,375.03	Do.
Eaton, Charles E.	Spawn-taker	Apr. 23 to June 6, 1888	45.00	do	66.00	Havre de Grace, Md.
Edwards, Vinal N.	Watchman and collector	July 1, 1887, to June 30, 1888	60.00	do	720.00	Wood's Holl, Mass.
Eichelberger, George F.	Distribution messenger	May 19 to 31, 1888	45.00	do	18.87	Office moving.
Do	Laborer	June 27 to 30, 1888	1.50	Per day	6.00	Car No. 3.
Ellis, J. F.	Car captain	July 1, 1887, to June 30, 1888	100.00	Per month	1,200.00	

FISCAL YEAR 1887-'88—Continued

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Fennell, F. P.	Clerk	July 1, 1887, to Feb. 29, 1888.	\$50.00	Per month.	\$400.00	Division of fish-culture.
Do.	do	Mar. 1, 1888, to June 30, 1888.	75.00	do	300.00	Do.
Ferguson, T. B.	Chief assistant to commissioner	July 1, 1887, to Oct. 31, 1887.	416.66	do	1,666.64	Fort Washington, Md.
Fitzgerald, Edward	Assistant in hatchery	Apr. 1 to June 4, 1888.	50.00	do	106.67	Schooner <i>Grampus</i> .
Fitzgerald, Philip	Cabin-boy	July 1 to Sept. 22, 1887.	30.00	do	82.00	Fish-ponds, Washington, D. C.
Forbes, Thomas	Laborer	July 1, 1887, to June 30, 1888.	1.50	Per day.	269.63	Havre de Grace, Md.
Forsythe, John A.	Spawn-taker	Apr. 19 to June 6, 1888.	55.00	Per month.	88.00	Michigan stations.
Fox, J. C.	do	Oct. 8 to Nov. 26, 1887.	2.00	Per day.	100.00	Alpena, Mich.
Frost, S.	Assistant in hatchery	Dec. 1, 1887, to May 25, 1888.	50.00	Per month.	290.32	Construction of hatchery, Gloucester, Mass.
	Carpenter	Nov. 21 to Dec. 3, 1887.	2.50	Per day.	25.00	
Gill, Israel C.	Fishery expert	Dec. 9, 1887, to Jan. 7, 1888.	2.00	do	60.00	Schooner <i>Grampus</i> .
Gill, Herbert A.	Chief division of accounts and disbursing agent.	July 1, 1887, to June 30, 1888.	2,200.00	Per annum.	2,200.00	
Gleason, Michael	Distribution messenger.	Apr. 23 to June 11, 1888.	60.00	Per month.	98.00	Car No. 2 and detached.
Goldsmith, Z. H.	Foreman	July 1, 1887, to June 30, 1888.	70.00	do	840.00	Fish-ponds, Washington, D. C.
Gorham, C. E.	Civil engineer and draughtsman	do	150.00	do	1,800.00	Central offices.
Green, Loren W.	Station superintendent	July 1, 1887, to Apr. 30, 1888.	120.00	do	1,200.00	Baird, Cal.
Green, Reuben G.	Laborer	do	55.00	do	550.00	Do.
Griffin, Charles L.	Second mate.	July 1, 1887, to Sept. 16, 1887.	75.00	do	190.00	Schooner <i>Grampus</i> .
Griffiths, George J.	Cook	July, 1887.	30.00	do	39.30	Havre de Grace, Md., and subsistence 30 cents a day.
Do.	do	Aug. 1, 1887, to June 30, 1888.	30.00	do	420.60	Wood's Holl, Mass., and subsistence 30 cents a day.
Hare, S. J.	Night watchman, offices.	July, 1887.	60.00	do	60.00	Central offices.
Do.	Skilled laborer	Sept. 1, 1887, to June 30, 1888.	60.00	do	600.00	Assistant to photographer.
Hayes, Edward	Stenographer	July 1, 1887, to June 30, 1888.	150.00	do	1,800.00	Commissioner's Office.
Hessel, Rudolph	Station superintendent	do	150.00	do	1,800.00	Fish-ponds, Washington, D. C.
Hancock, W. K.	Messenger to station.	July 1, 1887, to Mar. 31, 1888.	20.00	do	180.00	Wytheville, Va.
Do.	do	Apr. 1, 1888, to June 30, 1888.	40.00	do	120.00	Do.
Harris, Edward	Cook	Sept. 26, 1887, to Jan. 15, 1888.	45.00	do	164.27	Car No. 2.
Do.	do	Apr. 23, 1888, to May 31, 1888.	45.00	do	57.00	Do.
Hagan, F. P.	Distribution messenger.	May 1 to June 6, 1888.	45.00	do	54.00	Do.
Holmes, J. F.	Cook's assistant	Apr. 26 to 30, 1888.	35.00	do	3.33	Havre de Grace, Md.
Do.	do	May, 1888.	20.00	do	20.00	Do.
Harris, Gwynn	Temperature observer.	July 1, 1887, to Aug. 31, 1887.	15.00	do	30.00	Washington, D. C.
Hinrichs, H. Stanley	Clerk	Apr. 23, 1888, to June 30, 1888.	40.00	do	90.66	Office, scientific inquiry.
Harron, L. G.	Seine captain	Mar. 20 to June 5, 1888.	60.00	do	153.23	Fort Washington, Md.
Harmon, Frank S.	Assistant at hatchery	July 1, 1887, to Feb. 29, 1888.	50.00	do	400.00	Northville, Mich.
Hult, J.	Carpenter	Nov. 21 to Dec. 3, 1887.	2.25	Per day.	22.50	Construction of hatchery, Gloucester Mass.
Hunter, James B.	Spawn-taker.	Oct. 29 to Dec. 10, 1887.	2.00	do	86.00	Michigan stations.

Person	Position	Period	Amount	Remarks
Hudson, C. B.	Draughtsman	Oct. 1, 1887, to June 10, 1888	50.00	Report on work of schooner <i>Grampus</i> .
Hahn, Edward E.	Second mate	Sept. 17, 1887, to June 30, 1888	75.00	Schooner <i>Grampus</i> .
Hamlen, William	In charge steamer <i>Haley</i>	July 1, 1887, to Nov. 30, 1887	83.33	Steamer <i>Haley</i> .
Do.	In charge station	Dec. 1 to 26, 1887	83.33	Havre de Grace, Md.
Do.	Expert fish-culturist	Feb. 25 to June 30, 1888	60.00	Havre de Grace, Md., and Gloucester, Mass.
Hollingsworth, John H.	Assistant in hatchery	May 1 to June 6, 1888	60.00	Havre de Grace, Md.
Hollingsworth, W. J.	Spawn-taker	Apr. 23 to 30, 1888	55.00	Do.
Houston, Joseph	Cook	Apr. 1 to June 30, 1888	40.00	Fort Washington, Md.
James, Harry H.	Distribution messenger	May 1 to June 7, 1888	45.00	Car No. 1.
Janson, John	Carpenter	July 1, 1887, to June 30, 1888	75.00	Wood's Holl, Mass.
Jarvis, Charles	Office messenger	Dec. 16, 1887, to June 30, 1888	20.00	Offices accounts and distribution.
Jerrell, H. P.	Clerk	July 1, 1887, to Mar. 19, 1888	83.33	Office of records.
Johnson, James H.	Office janitor	July 1 to 5, 1887	1.50	Central offices.
Do.	Laboratory janitor	July 12 to Sept. 30, 1887	62.50	Wood's Holl, Mass.
Do.	Do.	Oct. 1 to 5, 1887	40.00	Do.
Do.	Laborer	Feb. 17 to 22, 1888	1.50	Central offices.
Do.	Office messenger	Apr. 9 to 17, 1888	2.00	Do.
Do.	Do.	June 26 to 30, 1888	1.50	Do.
Johnson, R. S.	Distribution messenger	Sept. 30 to Dec. 31, 1887; Feb. 1 to 15, and May 1 to June 30, 1888.	75.00	Cars Nos. 1 and 3.
Jones, Alexander	Watchman	Dec. 16 to 30, 1887, to June 30, 1888.	45.00	St. Jerome's, Md.
Jones, George A.	Laborer	July 1, 1887, to Apr. 20, 1888	55.00	Wytheville, Va.
Do.	Spawn-taker	Apr. 21 to June 4, 1888	55.00	Fort Washington, Md.
Do.	Laborer	June 5 to 30, 1888	55.00	Wytheville, Va.
Jones, James T.	Spawn-taker	Apr. 23 to June 6, 1888	55.00	Havre de Grace, Md.
Joyce, Sarah	Temperature observer	July 1, 1887, to June 30, 1888	5.00	Fort Washington, Md.
Kidder, J. H.	Assistant	July 1 to Sept. 15, 1887	100.00	Methods preserving bait, Wood's Holl, Mass.
Do.	Principal assistant	Sept. 16 to Oct. 15, 1887	200.00	Commissioner's office.
Do.	Do.	Oct. 16, 1887, to Jan. 31, 1888	250.00	Do.
Kenly, D. W.	Expert fish-culturist	July 1, 1887, to Nov. 19, 1887	65.00	Havre de Grace, Md.
Do.	Do.	Nov. 20, 1887, to Feb. 29, 1888	65.00	Gloucester, Mass.
Do.	Do.	Mar. 1 to June 30, 1888	65.00	Havre de Grace, Md.
Kenly, R. R.	Spawn-taker	Apr. 10 to May 31, 1888	35.00	Do.
Do.	Assistant in hatchery	June 1 to 5, 1888	40.00	Do.
Kemball, William M.	Office messenger	Sept. 12, 1887, to Apr. 3, 1888	15.00	Office of records.
Keenan	Spawn-taker	Apr. 23 to June 6, 1888	55.00	Havre de Grace, Md.
Keller, Thomas W.	Record clerk	Apr. 1 to June 30, 1888	75.00	Fort Washington, Md.
Lincoln, Anne C.	Clerk	July 1, 1887 to June 30, 1888	50.00	Property office.
Lucas, E. R.	Distribution messenger	Sept. 27, 1887, to Jan. 15, 1888; Apr. 23 to June 30, 1888.	60.00	Car No. 2 and detached.
Lambson, Giles H.	Do.	May 1 to June 30, 1888	45.00	Car No. 2.
Lang, Edwin G.	Assistant draughtsman	Apr. 25 to June 30, 1888	40.00	Central offices.
Larkin, John M.	Spawn-taker	Apr. 19 to May 31, 1888	35.00	Havre de Grace, Md.
Larkin, Timothy	Do.	Apr. 23 to June 6, 1888	45.00	Do.
Latimer, C. E.	Clerk	July 1 to Nov. 30, 1887	55.00	Office of records.
Do.	Do.	Dec. 1, 1887, to June 30, 1888	70.00	Do.
Lee, Leslie A.	Laboratory assistant	July 13 to Sept. 30, 1887	3.00	Investigations, Wood's Holl, Mass.
Do.	Chief scientific staff	Oct. 26, 1887, to June 30, 1888	150.00	Steamer <i>Albatross</i> .
Lee, Thomas	Naturalist	July 1, 1887, to Oct. 31, 1887	100.00	Do.
Do.	Do.	Nov. 1, 1887, to May 31, 1888	120.00	Do.

FISCAL YEAR 1887-'88—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Lendman, Frederick.....	Seaman.....	Mar. 15 to June 30, 1888.....	\$45.00	Per month.....	\$159.68	Schooner <i>Grampus</i>
Leonard, Timothy.....	Night watchman.....	Apr. 16 to May 31, 1888.....	50.00	do.....	75.00	Fort Washington, Md.
Lewis, C. C.....	Distribution messenger.....	Oct. 1, 1887, to Jan. 15, 1888; Apr. 23 to June 30, 1888.....	60.00	do.....	345.03	Car No. 2 and detached.
Linton, Edwin.....	Laboratory assistant.....	July 10 to Sept. 8, 1887.....	3.00	Per day.....	183.00	Investigations, Wood's Holl, Mass.
Linton, M. B.....	do.....	do.....	1.50	do.....	91.50	Do.
Locke, E. F.....	Assistant in hatchery.....	Feb. 27 to May 4, 1888.....	50.00	Per month.....	111.64	Gloucester, Mass.
Lynch, Richard.....	In charge Arsenal ponds.....	July 1, 1887, to June 30, 1888.....	15.00	do.....	180.00	Washington, D. C.
Lyons, A. L.....	Spawn-taker.....	Apr. 26 to June 5, 1888.....	35.00	do.....	46.66	Havre de Grace, Md.
McCabe, H.....	Carpenter's helper.....	Nov. 21 to 30, 1887.....	2.25	Per day.....	16.31	Construction of hatchery, Gloucester, Mass.
McConnell, Harry.....	Distribution messenger.....	May 9 to June 8, 1888.....	45.00	Per month.....	45.39	
McCormick, Daniel.....	do.....	May 21 to June 8, 1888.....	45.00	do.....	27.97	
Maddocks, Luther.....	Statistical agent.....	Apr. 1 to June 30, 1888.....	150.00	do.....	450.00	Division of fisheries.
McDonald, Marshall.....	Chief of division.....	July 1 to Oct. 31, 1887.....	200.00	do.....	600.00	Division of fish-culture.
Do.....	do.....	Nov. 1, 1887, to Feb. 17, 1888.....	2,800.00	Per annum.....	836.74	Do.
Do.....	Commissioner.....	Feb. 18 to June 30, 1888.....	5,000.00	do.....	1,840.68	
McNaney, John T.....	Spawn-taker.....	Apr. 23 to June 6, 1888.....	55.00	Per month.....	80.67	Havre de Grace, Md.
Mariner, S. V.....	do.....	do.....	45.00	do.....	63.33	Do.
Martin, H. E.....	Clerk.....	May 1 to June 15, 1888.....	60.00	do.....	90.00	Do.
Martin, S. J.....	Watchman and collector.....	July 1, 1887, to May 3, 1888.....	50.00	do.....	504.84	Statistics, Gloucester, Mass.
Do.....	In charge of station.....	May 4 to June 30, 1888.....	70.00	do.....	133.23	Gloucester, Mass.
Mather, Fred.....	Assistant.....	July 1, 1887, to June 30, 1888.....	500.00	Per annum.....	500.00	Cold Spring Harbor, N. Y.
Mathews, J. S.....	Spawn-taker.....	Apr. 16 to May 31, 1888.....	35.00	Per month.....	52.50	Havre de Grace, Md.
Maxwell, John.....	Machinist.....	July 1, 1887, to Apr. 30, 1888.....	100.00	do.....	1,000.00	Wood's Holl, Mass.
Do.....	Acting station superintendent.....	May 1 to June 30, 1888.....	100.00	do.....	200.00	Do.
Maynard, William.....	Night watchman.....	July 1, 1887, to Mar. 31, 1888.....	45.00	do.....	405.00	Central Station.
Do.....	In charge of launch.....	Apr. 1 to June 19, 1888.....	60.00	do.....	158.00	Fort Washington, Md.
Do.....	Night watchman.....	June 20 to 30, 1888.....	50.00	do.....	18.33	Central Station.
Mewshaw, W. H.....	Spawn-taker.....	Apr. 23 to June 6, 1888.....	45.00	do.....	66.00	Havre de Grace, Md.
Miller, George A.....	Ship's writer.....	June, 1888.....	60.00	do.....	60.00	Schooner <i>Grampus</i> .
Mitchell James.....	Spawn-taker.....	Apr. 23 to 30, 1888.....	35.00	do.....	9.33	Havre de Grace, Md.
Do.....	do.....	May 1 to June 6, 1888.....	45.00	do.....	54.00	Do.
Moore, Daniel.....	Scullion.....	Apr. 1 to May 31, 1888.....	25.00	do.....	50.00	Fort Washington, Md.
Morgan, George.....	Laborer.....	Apr. 8 to May 31, 1888.....	45.00	do.....	79.50	Central Station.
Morgan, W. H.....	do.....	July 1, 1887, to Mar. 31, 1888.....	50.00	do.....	450.00	Do.
Do.....	Superintendent of hatchery.....	Apr. 1 to June 7, 1888.....	60.00	do.....	134.00	Fort Washington, Md.
Moore, George H. H.....	Car captain.....	July 1, 1887, to June 30, 1888.....	100.00	do.....	1,200.00	Car No. 2; also acting chief division of distribution, July 1, 1887, to Sept. 30, 1887.
Morse, Charles.....	Spawn-taker.....	Apr. 21 to May 31, 1888.....	35.00	do.....	46.67	Havre de Grace, Md.
Morse, R. E.....	do.....	Apr. 23 to May 31, 1888.....	35.00	do.....	44.33	Do.

Munson, Horatio.....	Assistant.....	Oct. 24 to Nov. 22, 1887.....	1.75	Per day.....	43.31	Grand Lake Stream, Me.
Munson, W. H.....	do.....	Sept. 1 to Dec. 31, 1887.....	1.75	do.....	190.75	Do.
Do.....	Night watchman.....	Sept. 17 to Oct. 25, 1887.....	.25	Per night.....	9.75	Do.
Munson, Stephen H.....	Laborer.....	Sept. 15 to Nov. 23, 1887.....	1.25	Per day.....	43.13	Do.
Murphy, E. T.....	Spawn-taker.....	Apr. 20 to May 31, 1888.....	35.00	Per month.....	47.83	Havre de Grace.
Murphy, I. D.....	do.....	Apr. 16 to 30, 1888.....	45.00	do.....	22.50	Do.
Do.....	do.....	May 1 to June 6, 1888.....	55.00	do.....	66.00	Do.
Murphy, Thomas.....	Laborer.....	July 1 to Dec. 31, 1887.....	1.50	Per day.....	276.00	Fish-ponds, Washington, D. C.
Do.....	Night watchman.....	Jan. 1 to Feb. 15, 1888.....	1.50	Per night.....	69.00	Do.
Do.....	Laborer.....	Feb. 16 to June 30, 1888.....	45.00	Per month.....	201.72	Do.
Nealy, H. D.....	Draughtsman.....	Nov. 4 to 30, 1887.....	3.00	Per day.....	69.00	Division scientific inquiry.
Neff, Louis.....	Laborer.....	July, 1887.....	55.00	Per month.....	55.00	Fish-ponds, Washington, D. C.
Nelson, Henry J.....	Seaman.....	July 1, 1887, to Oct. 5, 1887.....	45.00	do.....	142.25	Schooner <i>Grampus</i> .
Nicholson, M. L. (Miss).....	Clerk.....	Nov. 19, 1887, to June 30, 1888.....	50.00	do.....	370.00	Office of accounts.
Nicholson, S. L.....	Distribution messenger.....	May 4 to June 4, 1888.....	45.00	do.....	46.65	Division of fish culture.
O'Connor, J. J.....	Clerk.....	July 1, 1887, to Nov. 30, 1887.....	115.00	do.....	575.00	Do.
Do.....	do.....	Dec. 1, 1887, to June 30, 1888.....	150.00	do.....	1,050.00	Do.
O'Neill, Warren.....	Spawn-taker.....	Apr. 20 to May 31, 1888.....	35.00	do.....	47.83	Havre de Grace, Md.
Osier, Frank.....	Seaman.....	July 1 to Oct. 31, 1887.....	45.00	do.....	180.00	Schooner <i>Grampus</i> .
O'Brien, James.....	Spawn-taker.....	Nov. 10 to Dec. 10, 1887.....	2.00	Per day.....	62.00	Michigan stations.
Page, William F.....	Superintendent of hatching.....	July 1, 1887, to June 30, 1888.....	100.00	Per month.....	1,200.00	Central Station.
Palmer, William.....	Modeler.....	July 1, 1887, to Sept. 30, 1887.....	65.00	do.....	195.00	Casts of fishes.
Palmer, I. M. (Mrs.).....	Clerk.....	Apr. 3 to June 30, 1888.....	60.00	do.....	176.00	Division of distribution.
Parker, H. P.....	Copyist.....	July 1 to Aug. 31, 1887.....	30.00	do.....	60.00	Office of records.
Do.....	Clerk.....	Sept. 1, 1887, to June 30, 1888.....	55.00	do.....	550.00	Do.
Parker, Peter, jr.....	Assistant.....	Aug. 1, 1887, to May 15, 1888.....	75.00	do.....	712.50	Division of scientific inquiry.
Do.....	do.....	May 16 to May 31, 1888.....	75.00	do.....	37.50	Office of Commissioner.
Do.....	Clerk.....	June, 1888.....	75.00	do.....	75.00	Office of accounts.
Partridge, Thomas.....	General assistant.....	{ Oct. 19-31; Dec. 1, 1887, to Jan. 31, 1888. }	1.00	Per day.....	130.00	Maine stations.
Do.....	do.....	{ May 11 to June 30, 1888..... }	.15	Per hour.....	10.50	Do.
Do.....	do.....	Dec., 1887, and Jan., 1888, extra labor.				
Do.....	do.....	Nov., 1887; Mar. and Apr., 1888.	30.00	Per month.....	90.00	Do.
Paul, Frank J.....	Seaman.....	Sept. 27, 1887, to June 6, 1888.....	45.00	do.....	375.00	Schooner <i>Grampus</i> .
Pearson, Edwin E.....	Carpenter.....	Mar. 12 to 31; May 8 to 11, 1888.	2.50	Per day.....	50.63	Repairs launch <i>Blue Wing</i> .
Pennington, R. R.....	Spawn-taker.....	Apr. 19 to 30, 1888.....	35.00	Per month.....	14.00	Havre de Grace, Md.
Do.....	do.....	May 1 to June 5, 1888.....	45.00	do.....	52.50	Do.
Percell, Arthur J.....	Cabin boy.....	Oct. 25-30, 1887; June 4-30, 1888.	30.00	do.....	32.80	Schooner <i>Grampus</i> .
Perry, Charles.....	Seaman.....	July 1, 1887, to May 7, 1888.....	45.00	do.....	460.16	Do.
Peters, James A.....	Cook.....	Aug. 1, 1887, to June 30, 1888.....	30.00	do.....	429.60	Havre de Grace, Md., and 30 cents a day subsistence.
Peters, J. H.....	Cook's assistant.....	Apr. 1 to June 6, 1888.....	20.00	do.....	44.00	Havre de Grace, Md.
Pinkerton, John A.....	Night watchman.....	Apr. 17 to May 27, 1888.....	40.00	do.....	53.51	Northville, Mich.
Pitts, Cornelius.....	Carpenter.....	Nov. 21 to Dec. 3, 1887.....	2.50	Per day.....	25.00	Construction of hatchery, Gloucester, Mass.
Platts, George.....	Spawn-taker.....	Nov. 1 to 26, 1887.....	2.00	do.....	52.00	Michigan stations.
Poindexter, Miles.....	Assistant at hatchery.....	Apr. 12 to June 30, 1888.....	40.00	Per month.....	105.33	Wytheville, Va.
Pollard, R.....	Laborer.....	July 1, 1887, to Dec. 24, 1887.....	1.50	Per day.....	189.00	Fish-ponds, Washington, D. C.
Quesenberry, C. R.....	do.....	July 1, 1887, to June 30, 1888.....	1.50	do.....	450.38	Do.

FISCAL YEAR 1887-'88—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Radcliff, Robert.	Laborer	Aug. 1, 1887, to Apr. 30, 1888	\$30.00	Per month.	\$270.00	Baird, Cal.
Rathbun, M. J., Miss	Clerk	July 1 to Oct. 31, 1887	40.00	do	160.00	Arrangement of collections.
Rathbun, Richard	Assistant.	do	166.66	do	666.64	Do.
Do	Assistant in charge of division	Nov. 1, 1887, to June 30, 1888	183.33	do	1,406.64	Division of scientific inquiry.
Ravenel, W. de C	Superintendent of station.	July 1 to Nov. 16, 1887; Mar. 1 to June 30, 1888.	125.00	do	1,066.67	Havre de Grace, Md.
Do.	Assistant.	Nov. 17, 1887, to Feb. 29, 1888	125.00	do	433.33	Investigating mullet fisheries, South-eastern coasts.
Reed, Sydney	Cabin boy	Nov. 9, 1887, to June 3, 1888	30.00	do	205.00	Schooner <i>Grampus</i> .
Do.	Seaman.	June 4 to 30, 1888	45.00	do	40.50	Do.
Reth, Peter	Spawn-taker.	Apr. 23 to June 6, 1888	45.00	do	66.60	Havre de Grace, Md.
Ripley, C. B.	Laborer.	Oct. 26 to Nov. 22, 1887	1.75	Per day.	43.32	Grand Lake Stream, Maine.
Robinson, E. M.	Fish-culturist	July 1 to Nov. 30, 1887	80.00	Per month.	400.00	Wytheville, Va., and distribution.
Do.	do	Dec. 1, 1887, to Feb. 29, 1888	80.00	do	240.90	Gloucester, Mass.
Do.	do	Mar. 1 to May 5, 1888	100.00	do	216.13	Do.
Do.	do	May 6 to June 30, 1888	100.00	do	183.37	Hatching shad on car No. 3.
Robinson, Washington	Office janitor.	July 1, 1887, to June 30, 1888	60.00	do	720.00	Central offices.
Rockwell, Julia L., Miss	Clerk	July 1 to Dec. 31, 1887; Feb. 1 to June 30, 1888.	70.00	do	770.00	Office of records.
Rogers, E. I.	Draughtsman.	July, 1887; Mar. 1 to June 30, 1888.	60.00	do	300.00	Engineer's office.
Do.	Inspector	Aug 1, 1887, to Feb. 29, 1888	75.00	do	525.00	Outlet sewer, fish ponds, Washington, D. C.
Rogers, O. V.	Assistant in hatchery	Dec., 1887; Feb. 1 to Apr. 30, 1888.	1.75	Per day.	211.75	Cold Spring Harbor, New York.
Root, A. W.	Assistant at hatchery	Nov. 1, 1887, to June 30, 1888	50.00	Per month.	400.00	Northville, Mich.
Root, M. S.	do	July 1, 1887, to Apr. 30, 1888	75.00	do	750.00	Do.
Do.	do	May 1 to June 30, 1888	50.00	do	100.00	Do.
Royster, J. H.	Distribution messenger.	May 1 to June 7, 1888	60.00	do	74.00	Car No. 1.
Ryder, Augustus	Seaman.	July 1 to Sept. 22, 1887	45.00	do	123.00	Schooner <i>Grampus</i> .
Ryder, John A.	Embryologist.	May 7 to June 30, 1888	150.00	do	270.97	Division of scientific inquiry
Sauerhoff, W. R.	Machinist	July 1 to Nov. 30, 1887	80.00	do	400.00	Steamer <i>Halcyon</i> .
Do.	do	Dec., 1887, to Mar. 11, 1888	80.00	do	268.39	Central station.
Do.	do	Mar. 12 to June 12, 1888	80.00	do	243.61	<i>Blue Wing</i> .
Do.	do	June 13 to 30, 1888	80.00	do	48.00	Havre de Grace, Md.
Sauerhoff, W. P.	Expert fish culturist.	July 1 to Oct. 6, 1887	75.00	do	239.52	Steamer <i>Halcyon</i> .
Do.	Carpenter	Oct. 7 to Nov. 30, 1887	80.00	do	144.51	Central station.
Do.	Expert fish culturist.	Dec. 1, 1887, to Apr. 30, 1888	75.00	do	375.00	Gloucester, Mass.
Do.	do	May 1 to 31, 1888	75.00	do	75.00	Havre de Grace, Md.
Scudder, Charles W.	Clerk	July 1, 1887, to June 30, 1888	90.00	do	1,080.00	Office of records.
Seagle, George A.	Station superintendent.	July 1, 1887, to Mar. 31, 1888	75.00	do	675.00	Wytheville, Va.
Do.	do	Apr. 1 to June 30, 1888	100.00	do	300.00	Do.
Seal, William P.	Assistant.	July 7 to Sept. 30, 1887	150.00	do	420.97	Wood's Holl, Mass.
Do.	do	Oct. 1 to 5, 1887	125.00	do	20.16	Do.

Do.....	In charge of aquaria.....	Oct. 6 to May 31, 1888	125.00	do	979.84	Aquaria, Washington, D. C., and superintendent central station from Feb. 24, 1888.
Sheehan, John F.....	Fish messenger.....	May 1 to June 7, 1888.....	45.00	do	55.50	Car No. 3.
Shipley, Charles E	Carpenter.....	Feb. 16 to 29, 1888.....	3.04	Per day.....	9.12	Havre de Grace, Md.
Do.....	do	Apr. 16 to 30, 1888.....	3.28	do	19.68	Do.
Shorter, William.....	Watchman	July 1 to 31, 1887.....	15.00	Per month.....	15.00	Office of records.
Shorter, H. B	Cook.....	Jan. 1 to 31, 1888.....	33.39	do	33.39	Gloucester, Mass.
Do.....	do	Feb. 1 to May 8, 1888.....	45.00	do	147.00	Do.
Simmons, Newton.....	Clerk.....	July 1 to Sept. 30, 1887.....	100.00	do	300.00	Office of accounts.
Do.....	Fish messenger.....	Oct. 1 to Dec. 31, 1887.....	100.00	do	300.00	
Do.....	In charge of car.....	Jan. 1 to June 30, 1888.....	100.00	do	600.00	Cars Nos. 1 and 3.
Sims, C. F.....	Cook.....	Apr. 19 to May 31, 1888.....	35.00	do	49.00	Havre de Grace, Md.
Slangston, Paul.....	Laborer.....	Oct. 25, 1887.....	1.25	Per day.....	94	Fish-ponds, Washington, D. C.
Smiley, Charles W.....	Chief division of records	July 1, 1887, to June 30, 1888.....	2,000.00	Per annum	2,000.00	Photographs of fishes, etc.
Smillie, T. W	Photographer	July 1 to Aug. 31, 1887.....	150.00	Per month.....	300.00	Office of accounts.
Smith, A. W	Clerk.....	July 1, 1887, to June 30, 1888.....	55.00	do	660.00	Preparation of statistics.
Smith, Hugh M	do	July 1 to Oct. 31, 1887.....	50.00	do	200.00	Do.
Do.....	do	Nov. 1, 1887, to Apr. 15, 1888.....	80.00	do	440.00	Do.
Do.....	do	May 1 to June 30, 1888.....	80.00	do	160.00	Michigan station.
Smith, H. P	Spawn-taker.....	Nov. 2 to 23, 1887.....	2.00	Per day.....	44.00	Cars Nos. 1, 2, 3.
Smith, John	Cook.....	Oct. 5, 1887, to June 30, 1888.....	45.00	Per month.....	268.58	Scientific inquiry, Wood's Holl, and Washington, D. C.
Smith, Sanderson	Assistant.....	July 11 to Dec. 5, 1887.....	125.00	do	704.84	Scientific inquiry, Wood's Holl
Smith, S. I	do	Aug. 5 to Sept. 8, 1887.....	125.00	do	142.20	Preparation of statistics.
Snell, Merwin P	Clerk.....	July 1 to Oct. 31, 1887.....	50.00	do	200.00	Do.
Do.....	do	Nov. 1, 1887, to June 30, 1888.....	60.00	do	480.00	Wood's Holl, Mass.
Solvin, Anders.....	Laborer.....	July 1, 1887, to June 30, 1888.....	40.00	do	480.00	Fort Washington, Md.
Spencer, Charles.....	Spawn-taker.....	Apr. 9 to May 31, 1888.....	40.00	do	69.33	Cars Nos. 1, 2.
Stevens, C. L.....	Fish messenger.....	Sept. 3, 1887, to Feb. 15, 1888.....	60.00	do	213.03	Office of records.
Stimpson, A. L	Taking care of offices.....	July 1, 1887, to June 30, 1888.....	20.00	do	100.00	Do.
Stoerzer, Albert J	Messenger.....	July 1 to Nov. 30, 1887.....	25.00	do	175.00	Pacific coast stations.
Do.....	do	Dec. 1, 1887, to June 30, 1888.....	41.66	do	124.98	Do.
Stone, Livingston.....	Field superintendent	July 1 to Sept. 30, 1887.....	166.66	do	1,499.94	Steamer <i>Albatross</i> .
Do.....	do	Oct. 1, 1887, to June 30, 1888.....	60.00	do	636.00	Potomac River.
Stromberger, H. H	Clerk.....	Aug. 1, 1887, to June 18, 1888.....	15.00	do	45.00	Battery station.
Stuart, William E.....	Temperature observer.....	Apr. 1 to June 30, 1888.....	40.00	do	52.00	Property office.
Sumption, T. M	Assistant in hatching.....	Apr. 27 to June 5, 1888.....	69.00	do	425.13	Division fish culture and distribution.
Tennent, E. S	Clerk.....	Dec. 27, 1887, to June 30, 1888.....	60.00	do	480.00	Do.
Terrell, L. D	do	July 1, 1887, to Mar. 31, 1888.....	75.00	do	300.00	Northville, Mich.
Do.....	do	Apr. 1 to June 30, 1888.....	1.50	Per day.....	37.50	Wood's Holl, Mass.
Thomas, James	Laborer.....	July 15 to Aug. 16, 1887.....	67.50	Per month.....	202.50	Central station.
Timbers, Robert	Assistant janitor	July 1 to Sept. 30, 1887.....	45.00	do	405.00	Northville, Mich.
Do.....	Laborer.....	Oct. 1, 1887, to June 30, 1888.....	2.50	Per day.....	40.00	Michigan stations.
Tindall, John	Carpenter.....	Oct. 10 to 14, 1887.....	2.00	do	75.00	Steamer <i>Fish Hawk</i> .
Do.....	Spawn-taker.....	Nov. 1 to 20, 1887.....	75.00	Per month.....	255.00	Wood's Holl, Mass.
Tolbert, George H.....	Expert fish culturist.....	July, 1887.....	75.00	do	270.00	Gloucester, Mass.
Do.....	Carpenter.....	Aug. 1 to Nov. 12, 1887.....	75.00	do	237.50	Havre de Grace, Md.
Do.....	do	Nov. 13, 1887, to Feb. 29, 1888.....	75.00	do	16.00	Central station.
Do.....	Expert fish culturist.....	Mar. 1 to June 5, 1888.....	75.00	do	63.33	Constructions at Duluth, Minn.
Do.....	do	June 6 to 11, 1888.....	100.00	do		
Do.....	Inspector.....	June 12 to 30, 1888.....		do		

FISCAL YEAR 1887-'88—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Townsend, Charles H.	Assistant.	July 1, 1887, to Oct. 31, 1887.	\$60.00	Per month.	\$240.00	Field naturalist.
Do.	do.	Nov. 1, 1887, to May 31, 1888.	160.00	do.	700.00	Naturalist steamer <i>Albatross</i> .
Do.	do.	June, 1888.	120.00	do.	120.00	Do.
Traylor, James G.	Clerk.	July 1, 1887, to Oct. 31, 1887.	100.00	do.	400.00	To assistant commissioner.
Do.	do.	Nov. 1 to 23, 1887.	100.00	do.	75.00	Office of accounts.
Trenholm, J. D.	Distribution messenger.	May 1 to June 30, 1888.	60.00	do.	120.00	Car No. 3.
Tulian, E. A.	Watchman.	Sept., 1887.	20.00	do.	20.00	Alpena, Mich.
Do.	Assistant at hatchery.	Oct. 1, 1877, to May 25, 1888.	50.00	do.	390.32	Do.
Tune, M. N.	Janitor and messenger.	July 1, 1877, to May 31, 1888.	45.00	do.	495.00	General offices.
Do.	do.	June, 1888.	52.50	do.	52.50	Do.
Verrill, A. E.	Assistant.	July 1, 1887, to June 30, 1888.	125.00	do.	1,500.00	Preparation of collections.
Voorhees, I. R.	Spawn-taker.	Nov. 3 to 28, 1887.	2.00	Per day.	52.00	Michigan stations.
Vradenberg, E.	Engineer.	Nov. 17, 1887, to Feb. 15, 1888.	45.00	Per month.	135.50	Northville, Mich.
Wade, W. S.	Distribution messenger.	May 8 to June 20, 1888.	45.00	do.	64.84	
Walters, C. H.	Assistant in hatchery.	Dec., 1887; Feb. 1 to Mar. 31, 1888.	2.00	Per day.	182.00	Cold Spring Harbor, N. Y.
Watkins, Thomas.	Janitor, quarters building.	July 1, 1887, to Aug. 31, 1887.	67.50	Per month.	135.00	Wood's Holl, Mass.
Do.	do.	Sept., 1887.	72.50	do.	72.50	Do.
Do.	Laborer.	Oct. 1, 1877, to June 30, 1888.	40.00	do.	360.00	Office of Commissioner.
Wheeler, Henry J.	Spawn-taker.	Apr. 23 to May 31, 1888.	35.00	do.	44.33	Harve de Grace, Md.
Whitehouse, William R.	Seaman.	Mar. 15 to June 30, 1888.	45.00	do.	159.68	Schooner <i>Grampus</i> .
Wilcox, W. A.	Statistical agent.	July 1, 1887, to Nov. 30, 1887.	50.00	do.	250.00	Gloucester, Mass.
Do.	Clerk.	Dec. 1, 1887, to June 30, 1888.	125.00	do.	875.00	Division of statistical inquiry.
Williams, George.	Cook.	June, 1888.	45.00	do.	45.00	Car No. 2.
Williams, George B., jr.	Assistant.	May, 1888.	125.00	do.	125.00	Baird, Cal.
Williams, H. D.	Clerk.	Jan., 1888; Mar. 12 to June 30, 1888.	100.00	do.	464.52	Office of accounts.
Wills, Homer.	Laborer.	July 1 to Oct. 15, 1887.	1.25	Per day.	112.87	Fish-ponds, Washington, D. C.
Wilson, J. Paul.	Chief property division.	July 1, 1887, to June 30, 1888.	2,000.00	Per annum.	2,000.00	Central offices.
Wires, S. P.	Watchman.	July and Aug., 1887.	20.00	Per month.	40.00	Alpena, Mich.
Do.	Foreman.	Sept. 1, 1887, to June 30, 1888.	75.00	do.	750.00	Do.
Wise, George W.	Laborer.	July and Aug., 1887.	1.50	Per day.	67.50	Fish-ponds, Washington, D. C.
Worth, S. G.	Assistant.	July, 1887.	60.00	Per month.	60.00	Site for rockfish hatchery, Weldon, N. C.
Do.	do.	Aug. 1 to Dec. 31, 1887.	60.00	do.	300.00	Shad statistics.
Do.	do.	Jan. 1 to Mar. 31, 1888.	125.00	do.	375.00	Office division of fish culture.
Do.	Station superintendent.	Apr. 1 to June 30, 1888.	125.00	do.	375.00	Fort Washington, Md.
Wroten, Winfield.	Spawn-taker.	Apr. 21 to June 6, 1888.	45.00	do.	66.00	Harve de Grace, Md.
Wright, George.	Distribution messenger.	May 8 to 31, 1888.	45.00	do.	20.32	
Wrightson, W. B.	Watchman.	July 1, 1887, to Aug. 17, 1887.	15.00	do.	23.23	St. Jerome's, Md.
Yeatman, P. T.	Fish messenger.	Apr. 1 to June 4, 1888.	60.00	do.	128.00	Fort Washington, Md.
Yeatman, Will.	do.	May 1 to 31, 1888.	45.00	do.	45.00	Car No. 2.
Abrams, Franzetti.	Laborer.	June 5, 1888.	2.00	Per day.	2.00	Fish hatchery, Duluth, Minn.

Alken, D. M.	Carpenter	Dec. 10, 1887, Jan. 9 and 10, 1888.	3.00	do	9.00	Central station.
Arthur, James	Laborer	May 1 to 15, 1888.	1.50	do	20.25	Fish-ponds, Washington, D. C.
Ayers, George	Masons' helper	Nov. 21 to Dec. 3, 1887.	2.50	do	16.67	Hatchery, Gloucester, Mass.
Ball, James L.	Laborer	Feb. 16 to 29, 1888.	1.52	do	9.12	Havre de Grace, Md.
Ben, Indian	do	Apr. 8 to 15, 1888.	1.00	do	7.00	Baird, Cal.
Bessels, Isaac	do	Dec. 7 to 13, 1887.	1.50	do	17.25	Arsenal ponds, Washington, D. C.
Billy, Indian	do	Feb. 1, Apr. 30, 1888.	25.00	Per month	75.00	Baird, Cal.
Bowden, S. H.	do	Oct. 24 to Nov. 5, 1887.	1.65	Per day	18.15	Maine stations.
Boyd, Samuel	do	Dec. 3 to 17, 1887.	1.50	do	16.50	Fish-ponds, Washington, D. C.
Brown, E. E.	Carpenter	Apr. 5 to 23, 1888.	3.00	do	49.50	Fort Washington, Md.
Butterfield, S.	Spawn-taker	Nov. 5 to 8, 1887.	2.00	do	8.00	Alpena, Mich.
Casey, John	Laborer	Apr. 16 to May 15, 1888.	1.50	do	25.80	Fish-ponds, Washington, D. C.
Charlie, Indian	do	Oct., 1887.	30.00	Per month	30.00	Baird, Cal.
Do.	do	Jan. 1 to Feb. 10, 1888.	1.50	Per day	33.00	Do.
Chesley, D. S.	do	Oct. 29 to Nov. 15, 1887.	1.25	do	17.50	Fish-ponds, Washington, D. C.
Clark, T. H.	Chemist	Mar., 1888.	25.00	Per month	25.00	Investigating cause of rust in mackerel.
Cleary, James	Spawn-taker	Nov. 25, 1887.	2.00	Per day	2.00	Michigan stations.
Cody, A.	Carpenter	Nov. 21 to Dec. 3, 1887.	2.50	do	27.50	Construction, Gloucester, Mass.
Corn, H. W.	Chemist	Apr. 1 to June 30, 1888.	25.00	Per month	75.00	Investigating cause of rust in mackerel.
Couture, Alex.	Spawn-taker	Oct. 29 to Dec. 10, 1887.	2.00	Per day	86.00	Michigan stations.
Couture, F.	do	Nov. 5 to 15, 1887.	2.00	do	22.00	Do.
Conway, Roger J.	Laborer	July 23 to 31, Aug. 29 to Sept. 26, 1887.	1.75	do	55.12	Wood's Holl, Mass.
Corey, R. M.	Spawn-taker	Nov. 8, 1887.	2.00	do	2.00	Michigan stations.
Corvin, James L.	Laborer	Apr. 5 to 28, 1888.	1.00	do	14.00	Wytheville, Va.
Craft, L.	Spawn-taker	Nov. 1 to 24, 1887.	2.00	do	48.00	Michigan stations.
Davis, A. B.	do	Apr. 24 to May 31, 1888.	45.00	Per month	55.50	Fort Washington, Md.
Day, Emery	Spawn-taker	Apr. 23 to May 31, 1888.	45.00	do	54.33	Harve de Grace, Md.
Day, James D.	do	Apr. 16 to June 6, 1888.	55.00	do	93.50	Do.
Doyle, John M.	Laborer	Dec. 23 and 24, 1887.	2.50	Per day	3.75	Wood's Holl, Mass.
Duff, James	do	July 23 to 30, 1887.	1.75	do	11.37	Do.
Eldridge, H. R.	do	Oct. 20 to Nov. 7, 1887.	1.25	do	6.25	Wytheville, Va.
Elliott, H. B.	Spawn-taker	Apr. 11 to May 31, 1888.	55.00	Per month	91.66	Fort Washington, Md.
Elliott, John T.	do	Apr. 23 to May 31, 1888.	35.00	do	44.33	Harve de Grace, Md.
Elsemore, W. H.	Laborer	Oct. 12 to Nov. 22, 1887.	1.75	Per day	45.94	Grand Lake Stream, Maine.
Ferguson, Andrew	Spawn-taker	Nov. 12 to 29, 1887.	2.00	do	36.00	Michigan stations.
Ferguson, Joseph	do	Nov. 17 to 21, 1887.	2.50	do	12.50	Do.
Gage, Jennie	Egg-picker	Nov. 10 to 19, 1887.	.75	do	6.75	Northville, Mich.
Gately, Thomas	Laborer	May 1 to 15, 1888.	1.50	do	19.50	Fish-ponds, Washington D. C.
Girvin, S.	Spawn-taker	Dec. 2 to 4, 1887.	2.00	do	6.00	Michigan stations.
Giuseppe, B.	Laborer	June 5 and 6, 1888.	2.00	do	4.00	Duluth, Minn.
Goodwin, George	Carpenter	Nov. 21 to Dec. 3, 1887.	2.25	do	22.50	Hatchery, Gloucester, Mass.
Gondreau, Amable	Spawn-taker	Nov. 6 to 22, 1887.	2.00	do	34.00	Michigan stations.
Gondreau, Louis	do	Nov. 14 to 21, 1887.	2.00	do	16.00	Do.
Grindle, J. H.	Laborer	Oct. 21 to Nov. 5, 1887.	1.65	do	21.45	Maine stations.
Grob, S.	Spawn-taker	Nov. 2 to 26, 1887.	2.00	do	50.00	Michigan stations.
Harris, B. G.	do	Apr. 13 to May 31, 1888.	55.00	Per month	88.00	Fort Washington, Md.
Hawkins, Isaac	Laborer	Dec. 3 to 17, 1887.	1.50	Per day	17.25	Arsenal ponds, Washington, D. C.
Healey, E. J.	Distribution messenger	May, 1888.	45.00	Per month	45.00	Michigan stations.
Hill, Wm., Jr.	Spawn-taker	Nov. 1 to 24, 1887.	2.00	Per day	48.00	Michigan stations.
Horan, W. H.	Distribution messenger	May 1 to June 7, 1888.	45.00	Per month	55.00	Fish-ponds, Washington, D. C.
Horan, Frank	Painter	October, 1887.	2.00	Per day	25.00	

FISCAL YEAR 1887-'88—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Jackson, James.....	Laborer.....	May 1 to June 30, 1888.....	\$1.50	Per day.....	\$42.75	Fish-ponds, Washington, D. C.
Jones, William.....	do.....	Dec. 3 to 17, 1887.....	1.50	do.....	17.25	Arsenal ponds, Washington, D. C.
Kemp, Albert.....	do.....	Nov. 21 to 26, 1887.....	2.25	do.....	11.25	Gloucester, Mass.
Kenly, L. H.....	Carpenter.....	Mar. 12 to 31, 1888.....	2.50	do.....	45.00	Fort Washington, Md.
Kerr, T. W.....	do.....	Sept. 19 to 24, 1887; Mar. 15, 1888.	3.00	do.....	21.00	Repairing cars.
Kessler, W. H. H.....	do.....	Apr. 10 to 14, 1888.....	3.00	do.....	14.25	Central station.
Kline, Isaiah.....	Laborer.....	Aug. 23 to Oct. 10, 1887; Jan. 10 to 11, 1888.	1.00	do.....	15.00	Wytheville, Va.
Koons, B. F.....	Assistant.....	Aug. 11 to Sept. 1, 1887.....	2.50	do.....	55.00	Investigations, Wood's Holl, Mass.
Lambert, Thomas E.....	Spawn-taker.....	Apr. 23 to 30, 1888.....	35.00	Per month.....	9.33	Havre de Grace, Md.
Do.....	do.....	May 1 to June 6, 1888.....	45.00	do.....	52.50	Do.
Leavesley, Richard.....	Night watchman.....	Nov. 12 to 30, 1887.....	1.50	Per day.....	28.50	Alpena, Mich.
Lentz, John W.....	Spawn-taker.....	Apr. 23 to May 31, 1888.....	35.00	Per month.....	44.33	Havre de Grace, Md.
Laplant, J.....	do.....	Nov. 7, 1887.....	2.00	Per day.....	2.00	Alpena, Mich.
Lapoint, John.....	do.....	Nov. 7 to 12, 1887.....	2.00	do.....	12.00	Do.
Lincoln, D.....	do.....	Nov. 3 to 21, 1887.....	2.00	do.....	38.00	Michigan stations.
Lowden, Hattie.....	Egg-picker.....	Nov. 1 to 30, 1887; Feb. 6 to 27, 1888.	.75	do.....	33.00	Northville, Mich.
Lowden, James K.....	Carpenter.....	Aug. 23 to Sept. 11, 1887.....	2.25	do.....	32.05	Do.
Luizi, M.....	Laborer.....	June 6, 1888.....	2.00	do.....	2.00	Duluth, Minn.
McCarty, James.....	Spawn-taker.....	Nov. 8 to 21, 1887.....	2.00	do.....	28.00	Michigan stations.
McCormick, L. M.....	Laborer.....	Aug. 21 to Sept. 9, 1887.....	1.00	do.....	20.00	Marine investigations, New Jersey coast.
McDonald, T. R.....	Machinist.....	Oct. 15, 1887.....	3.00	do.....	3.00	Northville, Mich.
McDonald, Will.....	Spawn-taker.....	Nov. 12 to 24, 1887.....	2.00	do.....	26.00	Alpena, Mich.
McGill, William.....	Painter.....	Oct. 1 to 15, 1887.....	2.00	do.....	2.00	Fish-ponds, Washington, D. C.
McKenzie, Donald.....	Spawn-taker.....	Nov. 6 to 13, 1887.....	2.00	do.....	16.00	Michigan stations.
Major, M.....	do.....	Nov. 4 to 26, 1887.....	2.00	do.....	46.00	Do.
Martin, W. M.....	Laborer.....	Nov. 21 to 30, 1887.....	2.25	do.....	15.75	Hatchery, Gloucester, Mass.
Mattingley, H. C.....	Carpenter.....	Mich. 20 to 31, 1888.....	2.50	do.....	27.50	Havre de Grace, Md.
Mellon, Frank.....	Spawn-taker.....	Nov. 5 and 6, 1887.....	2.00	do.....	4.00	Michigan stations.
Miller, W. M.....	do.....	Nov. 1 to 22, 1887.....	2.00	do.....	44.00	Do.
Miller, Patrick.....	Laborer.....	Dec. 21 to 24, 1887.....	35.00	Per month.....	9.33	Havre de Grace, Md.
Nealy, H. D.....	Draughtsman.....	Oct. 31 to Nov. 3, 1887.....	3.00	Per day.....	12.00	Charts of fishing-grounds.
Nichols, Henry.....	Laborer.....	May. 18-8.....	1.50	do.....	10.50	Northville, Mich.
O'Brien, Pat.....	Spawn-taker.....	Nov. 2 to 23, 1887.....	2.00	do.....	44.00	Michigan stations.
Partridge, George H.....	Laborer.....	Jan., 1888.....	1.50	do.....	8.40	Maine stations.
Perrier, B.....	do.....	June 5 and 6, 1888.....	2.00	do.....	4.00	Duluth, Minn.
Perrier, Philip.....	do.....	Oct. 11 to 14, 1888.....	1.50	do.....	4.50	Alpena, Mich.
Patvin, Baptis.....	do.....	June 5 and 6, 1888.....	2.00	do.....	4.00	Hatchery, Duluth, Minn.
Reed, J. M.....	Watchman.....	May 17 to 20, 1888.....	1.50	do.....	6.00	Alpena, Mich.
Reed, Nora.....	Egg-picker.....	Feb. 6 to 17, 1888.....	.75	do.....	8.25	Northville, Mich.

Employer	Period	Rate	Per day	Total
Soper, A. W.	June 4 to 12, 1888	1.25	Per day	11.25
Soper, Harry S.	June 13 to 30, 1888	1.00	do	18.00
Swine, Cornelius	Nov. 1 to Dec. 3, 1887	2.50	do	18.12
Turner Brothers	June 11 to 19, 1888	2.50	do	19.38
Umbarger, B.	Apr. 3 to 30, 1888	1.00	do	16.00
Van Hook, J. M.	Aug. 4 to Sept. 20, 1887	1.00	do	48.00
Wass, L. A.	Nov. 14 to 19, and Nov. 28 to Dec. 23, 1887	.40	Per hour	29.80
Do.	Nov. 21 to 26, 1887	3.60	Per day	14.40
Wight, Daniel	Aug. 1, 1887, to May 31, 1888			135.84
Wight, Charles A.	Sept. 1, 1887, to May 22, 1888			37.05
Wilcox, Ella	Nov. 1 to 30, 1887, Feb. 6 to 28, 1888	.75	Per day	33.37
				124,761.23

FISCAL YEAR 1888-'89.

Employer	Period	Rate	Per month	Total	Division of fisheries.
Abbott, W. H.	Sept. and Oct., 1888; Jan., 1889	50.00	Per month	150.00	Division of fisheries.
Do.	Apr. 1 to June 30, 1889	65.00	do	195.00	Do.
Adams, A. C.	Jan. 1 to June 30, 1889	115.00	do	690.00	Schooner <i>Grampus</i> .
Adams, C. B.	do	100.00	do	600.00	Steamer <i>Fish Hawk</i> .
Addison, A. C.	July 1, 1888, to June 30, 1889	1,400.00	Per year	1,400.00	Office of accounts.
Alexander, A. B.	July 1 to Oct. 31, 1888	90.00	Per month	360.00	Steamer <i>Albatross</i> .
Do.	Nov. 1, 1888, to June 30, 1889	100.00	do	800.00	Do.
Ames, H. P.	Oct. 26, 1888, to Jan. 31, 1889	44.00	do	140.52	Gloucester, Mass.
Arey, Hiram F.	Dec. 18 to 31, 1888	45.00	do	20.32	Schooner <i>Grampus</i> .
Atkins, Charles G.	July 1, 1888, to June 30, 1889	150.00	do	1,800.00	Maine stations.
Baldrige, L. E.	June 10 to 29, 1889	1.25	Per day	21.25	Neosho, Mo.
Barber, A. J.	Aug. 30 to Sept. 21, 1888	3.50	do	76.13	Baird, Cal.
Do.	Dec. 24, 1888, to Jan. 10, 1889; Feb. 21 and 22, 1889	3.00	do	26.25	Do.
Barber, A. L.	Dec. 1 to 18, 1888	3.00	do	54.00	Do.
Barbour, S. S.	July 1, 1888, to June 30, 1889	50.00	Per month	600.00	Schooner <i>Grampus</i> .
Barry, Patrick	July 1 to Oct. 31, 1888	40.00	do	160.00	Wood's Holl, Mass.
Bartlett, L. de F.	Nov. 1, 1888, to June 3, 1889	45.00	do	319.50	Steamer <i>Albatross</i> .
Do.	July 1 to Oct. 31, 1888	60.00	do	240.00	Do.
Bartol, E. W.	Nov. 1, 1888, to May 13, 1889	69.00	do	443.90	Do.
Bass, J. L.	Apr. 24 to May 27, 1889	20.00	do	22.08	Havre de Grace, Md.
Bass, S. S.	Jan. 10 to 31, 1889	3.00	Per day	53.00	Baird, Cal.
Baur, J. P.	Nov. 1, 1888, to Feb. 28, 1889	3.00	do	357.00	Do.
Do.	July 8 to Sept. 8, 1888	45.00	Per month	91.84	Central Station.
Do.	Nov. 1, 1888, to Mar. 31, 1889	45.00	do	225.00	Car No. 1.
Do.	Apr. 1 to 8, 1889	45.00	do	12.00	Central Station.
Do.	Apr. 9 to June 7, 1889	55.00	do	108.16	Fort Washington, Md.
Do.	July 1, 1888, to May 31, 1889	175.00	do	1,925.00	
Do.	June, 1889	200.00	do	200.00	
Beck, Frank W.	Feb. 9 to Apr. 13, 1889	45.00	do	96.64	Schooner <i>Grampus</i> .
Ben, Indian	Sept. 1, 1888, to Feb. 23, 1889	1.00	Per day	152.00	Baird, Cal.
Bene, Luis	Nov., 1888, to Jan., 1889	2.15	do	102.13	Duluth, Minn.
Berbon, Egil	May 31 to June 30, 1889	45.00	Per month	72.58	Schooner <i>Grampus</i> .
Berry, C. E.	July 1, 1888, to Feb. 28, 1889	45.00	do	360.00	Do.

FISCAL YEAR 1888-'89—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Billy, Indian.....	Laborer.....	Nov. 1, 1888, to Mar. 31, 1889.....	\$1.00	Per day.....	\$156.00	Baird, Cal.
Blades, J. H.....	Spawn-taker.....	Apr. 1 to May 21, 1889.....	55.03	Per month.....	92.26	Fort Washington, Md.
Blaisdell, Frank.....	Engineer and draughtsman.....	July 7, 1888, to May 30, 1889.....	150.00	do.....	1,620.97	Central office.
Bollman, C. H.....	Field assistant.....	July 11 to Aug. 19, 1888.....	25.00	do.....	31.45	Interior waters.
Booth, Franklin.....	Assistant.....	June 22 to 30, 1889.....	125.00	do.....	37.50	Alaska waters.
Bowers, Seymour.....	Station superintendent.....	July, 1888.....	125.00	do.....	125.00	Duluth, Minn.
Bowser, J. A.....	Cook.....	July 1 to 10, 1888; Oct. 16 to Nov. 30, 1888.....	45.00	do.....	82.01	Car No. 1.
Do.....	do.....	July 11 to Oct. 15, 1888.....	45.00	do.....	143.49	Wood's Holl, Mass.
Bradley, Ella R.....	Egg-picker.....	Nov. 1, 1888, to Jan. 31, 1889.....	.75	Per day.....	48.63	Northville, Mich.
Briggs, Leander.....	Seaman.....	July 1 to Oct. 4, 1888.....	45.00	Per month.....	140.80	Schooner <i>Grampus</i> .
Do.....	Spawn-taker.....	Oct. 16, 1888, to Jan. 31, 1889.....	45.00	do.....	158.23	Gloucester, Mass.
Brittian, W. H.....	Office messenger.....	July 1, 1888, to June 30, 1889.....	35.00	do.....	420.00	Division of fish culture and office of Commission.
Brooks, W. K.....	Embryologist.....	July 13, to Sept. 30, 1888; June 18 to 30, 1889.....	150.00	do.....	456.93	Wood's Holl, Mass.
Brown, A. J.....	Carpenter.....	Mar. 28 to June 29, 1889.....	2.00	Per day.....	137.00	Neosho, Mo.
Brown, Edgar.....	Seaman.....	Nov. 1, 1888, to Jan. 17, 1889.....	45.00	Per month.....	79.47	Schooner <i>Grampus</i> .
Brown, James H.....	Carpenter.....	Oct. 4 to Nov. 13, 1888.....	3.25	Per day.....	104.12	Clackamas, Oregon.
Brown, James.....	Laborer.....	July 16 to Nov. 15, 1888.....	1.50	do.....	94.50	Fish ponds, Washington, D. C.
Brown, John E.....	Property clerk.....	July 1, 1888, to June 30, 1889.....	100.00	Per month.....	1,200.00	Office of distribution.
Brown, W. G.....	Laborer.....	Apr. 30 to June 30, 1889.....	1.25	Per day.....	60.62	Neosho, Mo.
Bryan, E. C.....	Clerk.....	Sept. and Oct., 1888.....	65.00	Per month.....	130.00	Report on work of <i>Grampus</i> .
Do.....	do.....	Nov. 1, 1888, to Jan. 31, 1889; Apr. 1 to June 30, 1889.....	100.00	do.....	600.00	Division of fisheries.
Buck, W. O.....	Assistant at hatchery.....	Oct. and Nov., 1888; Jan. and Feb., 1889.....	75.00	do.....	158.51	Maine stations.
Buck, H. H.....	do.....	July 1, 1888, to June 30, 1889.....	100.00	do.....	1,200.00	Do.
Bush, C. E.....	Clerk.....	July, 1888.....	40.00	do.....	40.00	Investigations, New Haven, Conn.
Bush, K. J.....	do.....	do.....	45.00	do.....	45.00	Do.
Butler, Joseph E.....	Seaman.....	Dec. 17, 1888, to May 13, 1889.....	45.00	do.....	220.64	Schooner <i>Grampus</i> .
Butler, George E.....	Office messenger.....	July 1, 1888, to June 30, 1889.....	50.00	do.....	600.00	General offices.
Center, H. R.....	Clerk.....	July 1, 1888, to Nov. 30, 1888.....	50.00	do.....	250.00	Division of fisheries.
Do.....	do.....	Dec., 1888.....	50.00	do.....	50.00	Division of scientific inquiry.
Do.....	do.....	Jan. to June 30, 1889.....	83.33	do.....	499.98	Do.
Chapman, E. C.....	Laborer.....	Sept. 11 to Oct. 31, 1888.....	1.75	Per day.....	84.87	Clackamas, Oregon.
Chase, Gilson E.....	Cook.....	May 8 to June 30, 1889.....	39.00	Per month.....	69.43	Wood's Holl, Mass.
Chynowith, James.....	Laborer.....	July and Aug., 1888.....	52.50	do.....	105.00	Clackamas, Oregon.
Do.....	do.....	Sept. 1, 1888.....	57.50	do.....	57.50	Do.
Do.....	do.....	Oct., 1888.....	62.50	do.....	62.50	Do.
Do.....	do.....	Nov. 1 to 14, 1888.....	2.10	Per day.....	27.30	Do.
Clark, Frank N.....	Station superintendent.....	July 1, 1888, to June 30, 1889.....	2,200.00	Per annum.....	2,200.00	Michigan stations

Clark, George T	Spawn-taker	April 17 to May 25, 1889	55.00	Per month	70.02	Havre de Grace, Md.
Cleary, J. S	do	Oct. 21 to Nov. 25, 1888	2.00	Per day	72.00	Alpena, Mich.
Cleaveland, O. H.	Laborer and coxswain	Nov. 1, 1888, to Mar. 15, 1889	45.00	Per month	201.78	Wood's Holl, Mass.
Do	Coxswain of launch	May 1 to June 15, 1889	60.00	do	90.00	Fort Washington, Md.
Collins, D. E	Captain	July 1 to Oct. 31, 1888	125.00	do	500.00	Schooner <i>Grampus</i> .
Do	Field expert	Nov. 12 to 30, 1888; Jan. 3 to Apr. 30, 1889	115.00	do	525.33	Statistical inquiry.
Collins, George W	Seaman	July 1, to Oct. 31, 1888	45.00	do	180.00	Schooner <i>Grampus</i> .
Do	Spawn-taker	Nov. 15, 1888, to Mar. 31, 1889	60.00	do	272.00	Gloucester, Mass.
Collins, J. W	Assistant in charge division	July 1, 1888, to June 30, 1889	200.00	do	2,400.00	Division of fisheries.
Collins, Lillian M	Clerk	Apr. 8 to June 30, 1889	50.00	do	138.33	Do.
Conley, Frank S	Second mate	July 1, 1888, to June 30, 1889	55.00	do	660.00	Schooner <i>Grampus</i> .
Conture, Alex.	Spawn-taker	Oct. 4 to Dec. 14, 1888	2.00	Per day	124.00	Michigan stations.
Do	Laborer	Apr. 21 to May 2, 1889	1.50	do	18.00	Alpena, Mich.
Conway, W. L	do	July 1, 1888, to Mar. 31, 1889	45.00	Per month	405.00	Fish-ponds, Washington, D. C.
Cook, David S	Seaman	Apr. 13, to June 30, 1889	45.00	do	117.00	Schooner <i>Grampus</i> .
Corridon, J. J	Clerk	July 1, 1888, to June 30, 1889	100.00	do	1,200.00	Offices of Commissioner and division of fisheries.
Corti, Luis	Laborer	Nov. 1888, to Jan. 1889	2.15	Per day	102.13	Duluth, Minn.
Curtin, Thomas	do	July 1, 1888, to June 30, 1889	55.00	Per month	660.00	Fish-ponds, Washington, D. C.
Dana, Richard	Assistant	July 1 to Oct. 31, 1888	60.00	do	180.00	Wood's Holl, Mass.
Do	do	Nov. 1, 1888, to Apr. 15, 1889	75.00	do	412.50	Do.
Do	Expert fish-culturist	Apr. 16 to June 3, 1889	75.00	do	120.00	Central Station.
Do	Assistant	June 20 to 30, 1889	75.00	do	27.50	Wood's Holl, Mass.
Davis, A. B	Spawn-taker	Apr. 16 to May 15, 1889	55.00	do	54.11	Fort Washington, Md.
Davis, George W	Clerk	Dec. 4, 1888, to Feb. 28, 1889	75.00	do	210.00	Office of accounts.
Davis, Lafayette	Coxswain of launch	Apr. 30 to June 4, 1889	60.00	do	128.00	Fort Washington, Md.
Day, Emory	Spawn-taker	Apr. 16 to 30, 1889	45.00	do	22.50	Havre de Grace, Md.
Do	do	May 1 to 25, 1889	50.00	do	40.32	Do.
Day, James D	do	Apr. 15 to May 25, 1889	55.00	do	83.68	Do.
Day, James B	Night watchman	Sept. 15 to 30, and to Oct. 31, 1888	57.50	do	88.16	Clackamas, Oregon.
Do	do	Nov. 1 to 14, 1888	2.10	Per day	29.40	Do.
Dean, H. D	Foreman	July 1, 1888, to June 30, 1889	75.00	Per month	900.00	Northville, Mich.
Dick, Indian	Laborer	Aug. 18 to Sept. 21, 1888	1.00	Per day	33.00	Baird, Cal.
Dick, Mexican	do	Mar. 1 to 28, 1889	1.00	do	24.00	Do.
Dickerson, William	do	July 1 to 9, 1888	45.00	Per month	13.06	Fish-ponds, Washington, D. C.
Do	do	July 10, 1888, to June 30, 1889	55.00	do	644.03	Do.
Dimick, F. F	Statistical agent	Apr. 15 to June 30, 1889	25.00	do	63.33	Boston, Mass.
Dobson, W	Distribution messenger	May 1, to 28, 1889	40.00	do	36.13	Car No. 1.
Donnelly, F. L	do	July 1 to Oct. 31, 1888	75.00	do	300.00	Office of distribution.
Do	Clerk	Nov. 1, 1888, to June 30, 1889	83.33	do	667.32	Sandusky, Ohio.
Douglass, Henry	Station superintendent	Nov. 1, 1888, to Apr. 30, 1889	100.00	do	600.00	Division of fisheries.
Do	Collection of statistics	May 1 to June 30, 1889	100.00	do	200.00	Duluth, Minn.
Duke, Peter	Fireman	Nov. 1, 1888, to Feb. 28, 1889	50.00	do	200.00	Baird, Cal.
Dunning, L. H	Laborer	Nov. 19 and 20, 1888	2.50	Per day	2.50	Do.
Dunning, M. L	do	Nov. 6 to Dec. 16, 1888	3.00	do	113.00	Car No. 2.
Dunnington, W. A	Car captain	July 1, 1888, to June 30, 1889	100.00	Per month	1,200.00	Baird, Cal.
Durfor, C. F	Watchman	Oct. 18 to Nov. 30, 1888	3.00	Per day	132.00	Wood's Holl, Mass.
Edwards, Vinal N	Collector	July 1, 1888, to June 30, 1889	60.00	Per month	720.00	Baird, Cal.
Eliza, Indian	Labor	Sept. 1888, and Jan. 1889	1.00	Per day	46.00	Fort Washington, Md.
Elliott, H. B	Seine mender	Apr. 15, to May 15, 1889	55.00	Per month	55.94	Car No. 3.
Ellis, J. F	Car captain	July 1, 1888, to June 30, 1889	100.00	do	1,200.00	

FISCAL YEAR 1888-'89—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Erricson, F. L.	Distribution messenger	Apr. 26 to May 31, 1889	\$45.00	Per month	\$52.50	Car No. 1.
Fallert, Bernhard	Watchman and laborer	July 1 to Aug. 15; Sept. 1 to Oct. 31, 1888.	62.50	do	218.75	Clackamas, Oregon.
Do	Laborer	Nov. 1 to 14, 1888; Mar. 13 to Apr. 14, 1889.	2.10	Per day	88.20	Do.
Do	Watchman	Apr. 15 to 30, 1889	2.30	do	32.20	Do.
Do	do	May, 1889	62.25	Per month	62.25	Do.
Do	do	June, 1889	61.50	do	61.50	Do.
Farris, S. S.	Laborer	Aug. 23 to Sept. 20, 1888	3.00	Per day	81.50	Baird, Cal.
Fassett, H. C.	Captain's clerk	May 14, to June 30, 1889	69.00	Per month	108.10	Steamer <i>Albatross</i> .
Fennell, F. P.	Clerk	July 1, 1888, to June 30, 1889	100.00	do	1,200.00	Office of Commissioner.
Ferrell, Clement	Seaman	Nov. 1 to 19, 1888	45.00	do	28.50	Schooner <i>Grampus</i> .
Ficken, George	Laborer	Mar. 25 to Apr. 30, 1889	2.10	Per day	67.20	Clackamas, Oregon.
Do	do	May, 1889	57.25	Per month	57.25	Do.
Do	do	June, 1889	56.50	do	56.50	Do.
Ferlotie, Fred	Night watchman	Aug. 23 to Oct. 18, 1888	3.00	Per day	154.50	Baird, Cal.
Fitzgerald, Edward	Laborer	Nov. 20, 1888, to Jan. 26, 1889	1.50	do	82.50	Central Station.
Do	Watchman and laborer	Apr. 22 to May 20, 1889	50.00	Per month	47.26	Do.
Do	do	May 21 to 26, 1889	50.00	do	9.67	Fish-ponds, Washington, D. C.
Florence, J. H.	Laborer	Sept. 13 to 30, 1888	1.75	Per day	31.50	Clackamas, Oregon.
Do	do	Oct., 1888	57.50	Per month	57.50	Do.
Do	do	Nov. 1 to 14, 1888	2.10	Per day	29.40	Do.
Flowers, F. W.	Clerk	Mar. 11 to June 3, 1889	75.00	Per month	208.30	Office of accounts.
Forsythe, John A.	Spawn-taker	Apr. 20 to May 25, 1889	55.00	do	64.52	Havre de Grace, Md.
Foster, Robert	Laborer	Sept. 2 to Oct. 18, 1888	1.75	Per day	79.62	Clackamas, Oregon.
Foster, T. W.	Head carpenter	July 9 to Aug. 31; Oct. 1 to Nov. 31, 1888.	3.25	do	274.62	Do.
Do	do	Mar. 11 to May 31, 1889	3.33 $\frac{1}{3}$	do	236.66	Do.
Do	do	Sept., 1888	85.00	Per month	85.00	Do.
Do	do	June, 1889	3.33 $\frac{1}{3}$	Per day	81.66	Do.
Fox, J. C.	Assistant in hatchery	Oct. 13, 1888, to May 31, 1889	50.00	Per month	359.67	Alpena, Mich.
Gay, John	Inspector of stations	July 1, 1888, to May 31, 1889	125.00	do	1,375.00	Clackamas, Oregon.
Gerber, Fred	Machinist	Oct. 1 to Nov. 30, 1888	2.75	Per day	101.75	Do.
Do	do	Sept. 16 to 30, 1888	87.00	Per month	43.50	Do.
Gibbs, Charles E.	Laborer and general assistant	Aug. 4, 1888, to June 30, 1889	1.40	Per day	340.20	Maine stations.
Gilbert, Charles H.	Naturalist	Dec. 14, 1888, to June 14, 1889.	175.00	Per month	1,151.61	<i>Albatross</i> .
Gilbert, George	Spawn-taker	Nov. 1 to 27, 1888	2.00	Per day	50.00	Lake Erie.
Gill, Herbert A.	Disbursing agent	July 1, 1888, to June 30, 1889	2,200.00	Per year	2,200.00	Cars Nos. 1 and 2.
Gleason, Michael	Fish messenger	July 1, 1888, to May 31, 1889	60.00	Per month	517.61	Car No. 2.
Do	do	June, 1889	45.00	do	45.00	Central Station.
Goings Lemuel	Laborer	Dec. 1, 1888, to Jan. 16, 1889	1.50	Per day	51.00	Do.
Goings, Rudolph	do	Jan. 8 to 14, 1889	1.50	do	9.00	Do.

Goldsmith, Z. H.	Watchman	July 1, 1888, to June 30, 1889	70.00	Per month	840.00	Fish-ponds, Washington, D. C.
Gorham, C. E.	Engineer and draughtsman	July 1 to 6, 1888	150.00	do	29.03	Engineer's office.
Do.	do	July 9, 1888, to May 31, 1889	6.00	Per day	1,569.00	Do.
Gray, Avery	Carpenter	Aug. 1 to 24, 1888	2.25	do	31.50	Maine stations.
Gray, John	Fireman	Apr. 13 to 30, 1889	44.00	Per month	26.40	Blue Wing.
Gray, Rufus	Laborer	Oct. 14 to Nov. 28, 1888	1.50	Per day	45.00	Maine stations.
Griffiths, George J.	Cook	July 1, 1888, to Feb. 28, 1889	*30.00	Per month	312.19	Wood's Holl, Mass.
Do.	do	Apr. 8 to June 30, 1889	*30.00	do	108.20	Havre de Grace, Md.
Grot, S.	Spawl-taker	Nov. 1 to 29, 1888	2.00	Per day	58.00	Michigan stations.
Hagan, F. P.	Fish messenger	July 10, 1888, to June 30, 1889	45.00	Per month	431.47	Cars Nos. 1 and 3.
Hahn, Edward E.	Mate	July 1, 1888, to June 30, 1889	75.00	do	900.00	Schooner <i>Grampus</i> .
Hale, James A.	Carpenter	Dec. 13, 1888, to Feb. 6, 1889	3.00	Per day	120.00	Central Station, Washington, D. C.
Hall, Ansley	Field agent	May 8 to June 30, 1889	45.00	Per month	79.83	Statistical inquiry.
Hamilton, James	Engineer	Nov. 3, 1888, to Jan. 31, 1889	45.00	do	132.00	Northville, Mich.
Hamlen, William	Fish-culturist	July 1, 1888, to May 31, 1889	60.00	do	660.00	Havre de Grace, Md.
Do.	do	June 1 to 4, 1889	2.00	Per day	8.00	Do.
Hancock, W. K.	do	July 1, 1888, to Apr. 15, 1889	40.00	Per month	380.00	Wytheville, Va.
Do.	do	Apr. 16, 1888, to June 30, 1889	40.00	do	100.00	Do.
Hare, S. J.	Skilled laborer	July 1, 1888, to May 31, 1889	60.00	do	660.00	Assistant to photographer.
Harmon, Frank S.	General assistant	Oct. 23 to Dec. 11, 1888	2.00	Per day	80.00	Detroit River.
Do.	Packing eggs	Jan., 1889	1.50	do	1.13	Do.
Harron, L. G.	Fish messenger	July 1 to Sept. 30, 1888; Nov. 1, 1888, to May 31, 1889	60.00	Per month	600.00	Cars Nos. 2 and 3.
Hawley, E. M.	Laborer	Sept. 10 to Oct. 31, 1888	1.75	Per day	90.12	Clackamas, Oregon.
Hawley, Frank	do	Jan. 8 to 14, 1889	1.50	do	9.00	Central Station.
Hayes, Edward	Stenographer to Commission	July 1, 1888, to June 30, 1889	150.00	Per month	1,800.00	Schooner <i>Grampus</i> .
Henderson, Angus	Seaman	Dec. 13, 1888, to May 4, 1889	45.00	do	213.39	Division of fisheries.
Hudson, C. B.	Draughtsman	Apr., 1889	75.00	do	75.00	Schooner <i>Grampus</i> .
Henshall, J. A.	Naturalist	Jan. 25 to Mar. 31, 1889	100.00	do	222.58	Scientific inquiry.
Do.	do	Apr. 1 to May 7, 1889	100.00	do	122.58	Scientific inquiry.
Hessel, Rudolph	Superintendent fish-ponds	July 1, 1888, to June 30, 1889	150.00	do	1,800.00	Fish-ponds, Washington, D. C.
Higgins, L.	Tending net	Sept. 24, 1888	2.00	Per day	2.00	Maine stations.
Do.	Watchman	Oct. 24 to Nov. 20, 1888	1.25	do	33.75	Do.
Do.	Picking eggs, etc	Feb. 5 to Mar. 18, 1889	1.50	do	10.50	Do.
Hilleary, M.	Laborer	July 23 to 31, 1888	1.90	do	15.20	Clackamas, Oregon.
Do.	do	Aug. 1 to 31, 1888	52.50	Per month	52.50	Do.
Do.	do	Sept., 1888	57.50	do	57.50	Do.
Do.	do	Oct., 1888	63.50	do	63.50	Do.
Do.	do	Nov. 1 to 8, 1888	62.50	do	15.62	Do.
Hinrichs, H. Stanley	Clerk	July 1, 1888, to Jan. 31, 1889	40.00	do	280.00	Scientific inquiry.
Do.	do	Feb. 1 to June 30, 1889	60.00	do	300.00	Do.
Hodge, C. F.	Assistant	Aug. 4 to Sept. 30, 1888	50.00	do	95.16	Fish Hawk.
Do.	do	June 15 to 30, 1889	2.50	Per day	40.00	Scientific inquiry.
Hotaling, L.	Carpenter	July 12, 1888, to Jan. 31, 1889	3.50	do	334.25	Baird, Cal.
Hougherty, Milo	Spawl-taker	Oct. 24 to Nov. 16, 1888	2.00	do	48.00	Michigan stations.
Houston, Joseph	Cook	July 10 to Sept. 30, 1888	45.00	Per month	121.94	Car No. 1.
Hubbard, Waldo F.	Station superintendent	July 1 to Nov. 15, 1888	125.00	do	562.50	Clackamas, Oregon.
Do.	Custodian	Nov. 16, 1888, to Apr. 15, 1889	25.00	do	112.50	Do.
Do.	Station superintendent and foreman.	Apr. 15, 1888, to June 30, 1889	125.00	do	312.50	Do.

* Thirty cents per day subsistence.

FISCAL YEAR 1888-'89--Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Hudson, C. B.	Draughtsman	Sept. 15, 1888, to June 30, 1889	\$75.00	Per month	\$715.00	Division of fisheries, Central Station, scientific inquiry.
Hunter, Arthur	Laborer	Feb. 13 to 18, June 30, 1889	1.50	Per day	5.63	Fish ponds, Washington, D. C.
Hunter, James B.	Spawn-taker	Oct. 14 to Dec. 7, 1888	2.00	do	110.00	Alpena and Thompson, Mich.
Hunter, W. C.	Carpenter	May 27 to June 4, 1889	2.00	do	16.00	Neosho, Mo.
Janson, John	Fish-culturist and carpenter	July 1, 1888, to Mar. 31, 1889	75.00	Per month	675.00	Car No. 3 and Wood's Holl, Mass.
Jarvis, Charles B.	Office messenger	July 1 to 16, 1888	20.00	do	10.32	General offices.
Joe, Indian	Laborer	Aug. 18 to Dec. 19, 1888	1.00	Per day	60.25	Baird, Cal.
Johnson, James H.	Office janitor	July 1 to Oct. 2, 1888; Feb. 1 to May 6, 1889	1.50	do	106.50	General offices.
Johnson, R. S.	Distribution messenger	July 1, 1888, to May 31, 1889	75.00	Per month	825.00	Car No. 3.
Do.	do	June, 1889	45.00	do	45.00	Do.
Johnson, W.	Laborer	May 13 to June 29, 1889	1.25	Per day	50.00	Neosho, Mo.
Jones, Alexander	Watchman	July 1 to Dec. 31, 1888	45.00	Per month	270.00	St. Jerome's, Md.
Do.	do	Jan., Apr. 16 to June 11, 1889	45.00	do	129.00	Havre de Grace, Md.
Do.	do	Feb. to Apr. 15, 1889	45.00	do	112.50	Central Station.
Jones, George A.	Laborer	July 1, 1888, to June 7, 1889	55.00	do	617.83	Wytheville, Va.
Jones, James T.	Spawn-taker	Apr. 20 to May 25, 1889	55.00	do	64.52	Havre de Grace, Md.
Joyce, Sarah	Temperature observer	July 1, 1888, to June 30, 1889	10.00	do	120.00	Fort Washington, Md.
Keenan, James	Spawn-taker	Apr. 20 to May 25, 1889	55.00	do	64.52	Havre de Grace, Md.
Keller, T. W.	Clerk	July 1, 1888, to Mar. 31, 1889	75.00	do	675.00	Division of fisheries.
Do.	do	Apr. 1 to May 31, 1889	75.00	do	150.00	Fort Washington, Md.
Do.	do	June, 1889	75.00	do	75.00	Central Station.
Kendall, W. C.	Assistant	Feb. 4 to Apr. 13, 1889	60.00	do	139.57	Schooner <i>Grampus</i> .
Do.	do	Apr. 14, 1889, to June 30, 1889	60.00	do	154.00	Division of scientific inquiry.
Kenly, D. W.	Carpenter and fish-culturist	July, 1888	65.00	do	65.00	Central Station.
Do.	do	Aug. 1 to Nov. 1, 1888	75.00	do	225.00	Do.
Do.	do	Nov., 1888	75.00	do	75.00	Havre de Grace, Md.
Do.	do	Dec. 1, 1888, to Apr. 15, 1889	75.00	do	347.50	Central Station, \$80 for Jan., 1889.
Do.	do	Apr. 16 to May 31, 1889	75.00	do	112.50	Havre de Grace, Md.
Do.	do	June, 1889	75.00	do	75.00	Fort Washington, Md.
Kenly, Joseph	Distribution messenger	Apr. 18 to 30, 1889	40.00	do	17.33	Do.
Do.	do	May 1 to 28, 1889	45.00	do	40.64	Do.
Kemball, Walter	Seaman	July 2, 1888, to Jan. 11, 1889	45.00	do	254.96	Schooner <i>Grampus</i> .
Lambert, Thomas E.	Spawn-taker	Apr. 20 to May 25, 1889	50.00	do	58.65	Havre de Grace, Md.
Lambson, Giles	Distribution messenger	July 1, 1884, to Oct. 31, 1888	45.00	do	180.00	Car No. 2.
Do.	do	Nov. 1, 1888, to Mar. 15, 1889	60.00	do	329.03	Do.
Do.	do	Apr. 18 to May 31, 1889	60.00	do	86.00	Do.
Do.	do	June, 1889	45.00	do	45.00	Do.
Lang, Edwin G.	Draughtsman	July 1 to Sept. 30, 1888	40.00	do	120.00	Engineer's office.
Do.	Clerk	Nov. 23 to Dec. 22, 1888	40.00	do	40.00	Division scientific inquiry.
Larkin, Timothy	Spawn-taker	Apr. 20 to May 25, 1889	45.00	do	58.79	Havre de Grace, Md.
Latimer, C. E.	Clerk	July 1, 1888, to June 30, 1889	1,000.00	Per year	1,000.00	Office of records.

Name	Position	Period	Per month	Per day	Per year
Lee, Leslie A.	Naturalist	July 1 to Sept. 10, 1888	150.00		
Leonard, Timothy	Watchman	Apr. 18 to May 15, 1889	50.00		
Lewis, C. C.	Distribution messenger	July 1, 1888, to Oct. 31, 1888	60.00		
Do.	do	Nov. 1, 1888, to Mar. 15, 1889	75.00		
Do.	do	Apr. 25 to May 31, 1889	75.00		
Do.	do	June, 1889	45.00		
Do.	do	Feb. 1 to May 31, 1889	40.00		
Lewis, R. E.	Messenger	June, 1889	40.00		
Do.	Assistant	June 25 to 30, 1889	150.00		
Libbey, William	Special assistant	May 11 to June 30, 1889	30.00		
Lilga, Eric	Cabin boy	July 1, 1888, to June 30, 1889	50.00		
Lincoln, Anne C.	Clerk	Nov. 1, 1888, to May 10, 1889	60.00		
Littleton, George W.	Assistant in hatchery	July 24 to Nov. 7, 1888	60.00		
Locke, E. F.	Ship's writer	Nov. 8, 1888, to Mar. 31, 1889	60.00		
Do.	Spawn-taker	Apr. 1 to June 30, 1889	60.00		
Do.	Custodian and assistant	Nov. 6, 1888, to Jan. 31, 1889	75		
Lowden, Hattie	Egg picker	Oct. 23, 1888, to Jan. 25, 1889	1.50		
Lowden, Henry	Assistant	July 1 to Oct. 31, 1888	60.00		
Lucas, E. R.	Distribution messenger	Nov. 1, 1888, to Mar. 15, 1889	75.00		
Do.	do	Apr. 25 to May 31, 1889	75.00		
Do.	do	June, 1889	45.00		
Do.	do	May 14 to June 30, 1889	45.00		
Lundbland, Nils	Seaman	July 1, 1888, to June 15, 1889	15.00		
Lynch, Richard	In charge of ponds	Apr. 15 to May 31, 1889	45.00		
Lyons, A. L.	Spawn-taker	Nov. 1, 1888, to May 31, 1889	50.00		
McCormick, Andrew	Fish-culturist	July 5, 1888, to Mar. 31, 1889	40.00		
McCormick, Francis	Copyist	Apr. 1 to June 30, 1889	50.00		
Do.	do	Nov. 1, 1888, to May 31, 1889	25.00		
McCormick, Wanda	Cook	Sept. 23 to Oct. 31, 1888	50.00		
McDonald, John K.	Steward	July 1, 1888, to June 30, 1889	5,000.00		
McDonald, Marshall	Commissioner	May 1 to 26, 1889	50.00		
McConnell, Harry	Distribution messenger	Oct. 1888	40.00		
McGee, Francis	Assistant cook	Oct. 29 to Nov. 24, 1885	2.00		
McKee, Charles F.	Spawn-taker	July 30 and 31, 1888	1.90		
McKensie, Alex.	Laborer	Aug. 1888	52.50		
Do.	do	Sept. 1 to Oct. 22, 1888	1.75		
Do.	do	July 26 to Aug. 10, 1888	2.50		
McKerlie, John	Special assistant	Nov. 1, 1888, to May 31, 1889	50.00		
McLachlan, Daniel	Foreman	Apr. 15 to May 25, 1889	55.00		
McNamee, John	Spawn-taker	Apr. 22 to May 25, 1889	55.00		
McNaney, John F.	do	July 1 to Aug. 16, 1888	150.00		
Maddocks, Luther	Statistical agent	Nov. 1 to 24, 1888	2.00		
Major, M.	Spawn-taker	Nov. 2 to Dec. 1, 1888	2.00		
Mascon, Charles	do	Aug. 11 to Nov. 19, 1888	115.00		
Martin, George H.	Acting captain	July 11, 1888, to Mar. 31, 1889	60.00		
Martin, H. E.	Clerk	July 1 to Nov. 30, 1888	70.00		
Martin, S. J.	Custodian of station and assistant	Dec. 1, 1888, to June 30, 1889	50.00		
Do.	Assistant	Mar. 6 to May 20, 1889	2.00		
Mason, Frank B.	Carpenter	July 1, 1888, to June 30, 1889	500.00		
Mather, Fred	Assistant	Apr. 15 to May 25, 1889	45.00		
Mathews, John S.	Spawn-taker				

FISCAL YEAR 1888, 89—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Maxwell, John.....	Station superintendent.....	July 1, 1888, to June 30, 1889.....	\$100.00	Per month.....	\$1,200.00	Wood's Holl, Mass.
Maynard, William.....	Night watchman.....	July 1, 1888, to Dec. 31, 1888.....	50.00	do.....	300.00	Central Station.
Do.....	do.....	Jan. 1, 1889, to June 30, 1889.....	60.00	do.....	360.00	Do.
Meek, J. E.....	Carpenter.....	Apr. 15 to May 25, 1889.....	2.00	Per day.....	60.00	Neosho, Mo.
Miller, William.....	Spawn-taker.....	Nov. 1 to 26, 1888.....	2.00	do.....	52.00	Michigan stations.
Mitchell, James H.....	do.....	Apr. 18 to May 25, 1889.....	55.00	Per month.....	68.18	Havre de Grace, Md.
Mitchell, Nicholas.....	Spawn-taker and assistant.....	Oct. 29 to Nov. 24, 1888; Mar. 20 to Apr. 19, 1889.....	2.00	Per day.....	110.00	Sandusky, Ohio.
Molden, Frederick.....	Spawn-taker.....	Apr. 25 to May 15, 1889.....	45.00	Per month.....	30.77	Fort Washington, Md.
Mongear, Frank.....	Seaman.....	Sept. 11 to Nov. 19, 1888.....	45.00	do.....	103.50	Schooner <i>Grampus</i> .
Montgomery, Ben.....	Spawn-taker.....	Apr. 1 to May 20, 1889.....	45.00	do.....	74.03	Fort Washington, Md.
Moore, Daniel.....	Laborer.....	Mar. 28 to 30, 1889.....	1.00	Per day.....	2.50	Do.
Do.....	Scullion.....	Apr. and May, 1889.....	25.00	Per month.....	50.00	Do.
Moore, George H. H.....	Superintendent of distribution.....	July 1, 1888, to June 30, 1889.....	125.00	do.....	1,500.00	Central office.
Morgan, T. H.....	Laboratory assistant.....	Aug. 1 to Sept. 30, 1888.....	50.00	do.....	100.00	Wood's Holl, Mass.
Morgan, W. H.....	Laborer and watchman.....	Feb. 1 to Apr. 15, 1889.....	60.00	do.....	150.00	Central Station.
Do.....	Fish-culturist.....	Apr. 15 to May 21, 1889.....	60.00	do.....	70.64	Fort Washington, Md.
Do.....	Laborer and watchman.....	May 22 to June 30, 1889.....	60.00	do.....	79.36	Central Station.
Morrison, James.....	Spawn-taker.....	Nov. 1 to 27, 1888.....	2.00	Per day.....	52.00	Sandusky, Ohio.
Morrison, William.....	do.....	Oct. 30 to Nov. 27, 1888.....	2.00	do.....	54.00	Do.
Munson, H.....	Laborer.....	Oct. 22 to Nov. 20, 1888.....	1.75	do.....	45.50	Maine stations.
Munson, W. H.....	Foreman.....	Sept. 3, 1888, to Apr. 30, 1889.....	55.00	Per month.....	484.00	Do.
Murphy, E. T.....	Spawn-taker.....	May 1 to 25, 1889.....	45.00	do.....	36.29	Havre de Grace, Md.
Murphy, I. D.....	do.....	Apr. 16 to May 25, 1889.....	45.00	do.....	71.85	Do.
Murphy, Matthew A.....	Fireman.....	Mar. 1 to May 31, 1889.....	50.00	do.....	150.00	Duluth, Minn.
Murphy, Thomas.....	Laborer.....	July 1, 1888, to Mar. 31, 1889.....	45.00	do.....	405.00	Fish ponds, Washington, D. C.
Myers, W. T.....	Cook.....	Apr. 1 to 7, 1889.....	39.00	do.....	9.10	Havre de Grace, Md.
Do.....	Spawn-taker.....	Apr. 8 to May 25, 1889.....	45.00	do.....	70.79	Do.
Nay, E. M.....	Laborer.....	May 13 to June 15, 1889.....	1.25	Per day.....	35.62	Construction, Neosho, Mo.
Neal, B. F.....	Cook.....	Dec., 1888.....	45.00	Per month.....	45.00	Car No. 1.
Nellis, A. E.....	Assistant at hatchery.....	Nov., 1888; Apr., 1889.....	45.00	do.....	75.00	Sandusky, Ohio.
Nelson, G. M.....	Laborer.....	Mar. 26 to May 11, 1889.....	1.25	Per day.....	34.49	Neosho, Mo.
Nichols, M. V.....	do.....	Sept. 4, 1888, to Mar. 6, 1889.....	3.00	do.....	70.50	Baird, Cal.
Nicholson, M. L.....	Clerk and type-writer.....	July 1 to Jan. 11, 1889.....	55.00	Per month.....	349.52	Office of accounts.
Do.....	do.....	Jan. 12 to June 30, 1889.....	70.00	do.....	395.16	Do.
O'Brien, P.....	Spawn-taker.....	Nov. 1 to 22, 1888.....	2.00	Per day.....	44.00	Alpena, Mich.
Do.....	Assistant at hatchery.....	Dec. 10 to 13, 1888.....	1.50	do.....	6.00	Do.
O'Conner, J. J.....	Chief clerk.....	July 1, 1888, to June 30, 1889.....	2,200.00	Per year.....	2,200.00	Schooner <i>Grampus</i> .
Oliver, J. P.....	Seaman.....	Jan. 1 to June 30, 1889.....	45.00	Per month.....	270.00	Do.
Olsen, Tobias.....	do.....	May 16 to June 30, 1889.....	45.00	do.....	68.23	Do.
Oster, David.....	Cabin-boy.....	Dec. 17, 1888, to Feb. 8, 1889; Apr. 1 to May 10, 1889.....	30.00	do.....	92.77	Do.

Do.	Seaman	Feb. 9 to Mar. 31; May 11 to June 30, 1889.	45. 00	do.....	152. 62	Do.
Page, William F.	Expert fish-culturist.	Nov. 1, 1888, to Jan. 31, 1889	100. 00	do.....	300. 00	Central Station.
Do.	Station superintendent	Feb. 1, 1889, to June 30, 1889	125. 00	do.....	625. 00	Neosho, Mo.
Palmer, I. M.	Copyist	July 1, 1888, to Feb. 28, 1889	60. 00	do.....	480. 00	Office of Commissioner.
Do.	do	Mar. 1, 1889, to June 30, 1889	75. 00	do.....	300. 00	Do.
Parboff, Paul W.	Pilot	Aug. 2 to 21, 1888	75. 00	do.....	75. 00	Steamer <i>Albatross</i> .
Partridge, Thomas	Assistant at hatchery	July 1 to 7, 1888	1. 00	Per day.....	7. 00	Maine stations.
Do.	do	July 8 to 31, 1888	1. 25	do.....	30. 00	Do.
Do.	do	Aug. 1, 1888, to June 30, 1889	1. 50	do.....	456. 00	Do.
Parker, H. P.	Clerk	July 1, 1888, to June 30, 1889	70. 00	Per month.....	840. 00	Office of records.
Parker, Peter jr.	do	July 1 to Aug. 31, 1888	75. 00	do.....	150. 00	Office of accounts.
Do.	do	Oct. 1 to 31, 1888	75. 00	do.....	75. 00	Office of Commissioner.
Do.	do	Nov. 1, 1888, to May 31, 1889	75. 00	do.....	525. 00	Office of property.
Pearce, T. C.	Distribution messenger	Apr. 20, 1889, to June 30, 1889	45. 00	do.....	112. 50	Car No. 2.
Peck, James	Spawn-taker	Nov. 29 to Dec. 1, 1888	5. 50	Per day.....	16. 50	Aquaria, Central Station.
Do.	Assistant	June 28 to 30, 1889	2. 50	do.....	7. 50	Scientific inquiry, Wood's Holl, Mass.
Pennington, Robert	Spawn-taker	Apr. 15 to May 25, 1889	55. 00	Per month.....	73. 68	Havre de Grace, Md.
Pent, William	Pilot, seine-boat	Feb. 9 to Apr. 9, 1889	2. 00	Per day.....	120. 00	Schooner <i>Grampus</i> .
Percell, A. J.	Cabin-boy	July 1, 1888, to Nov. 19, 1888	30. 00	Per month.....	139. 00	Do.
Perry, Charles	Spawn-taker	Oct. 14 to 31, 1888	45. 00	do.....	20. 32	Gloucester, Mass.
Do.	do	Nov. 1, 1888, to Mar. 15, 1889	60. 00	do.....	269. 03	Do.
Peters, James A.	Cook	July 1 to 15, 1888	39. 00	do.....	19. 01	Havre de Grace, Md.
Pinkerton, J. A.	Assistant	Dec. 19, 1888, to May 31, 1889	40. 00	do.....	216. 77	Michigan stations.
Platts, George	Spawn-taker	Oct. 20 to Nov. 29, 1888	2. 00	Per day.....	82. 00	Do.
Poindexter, Miles	Assistant	July 1, 1888, to May 31, 1889	40. 00	Per month.....	440. 00	Wytheville, Va.
Do.	Laborer	June 1 to 7, 1889	40. 00	do.....	9. 33	Do.
Pritchard, S. L. R.	Clerk	Apr. 16 to June 30, 1889	50. 00	do.....	125. 00	Statistical inquiry.
Puschinsky, Fred	Assistant at hatchery	Mar. 25 to May 12, 1889	40. 00	do.....	63. 23	Duluth, Minn.
Quesenberry, C. R.	Laborer	July 1 to Dec. 15, 1888	1. 50	Per day.....	224. 25	Fish-ponds, Washington, D. C.
Quick, Philip	Assistant at hatchery	Mar. 21 to 26, 1889	2. 00	do.....	10. 00	Sandusky, Ohio.
Radcliff, Robert	Foreman	Aug. 20, 1888, to Jan. 31, 1889	125. 00	Per month.....	673. 39	Baird, Cal.
Do.	Laborer	Mar. 4 to 7, 1889	3. 00	Per day.....	12. 00	Do.
Rathbun, Richard	Assistant in charge scientific inquiry.	July 1, 1888, to June 30, 1889	2, 400. 00	Per year.....	2, 400. 00	
Ravenel, W. de C.	Station superintendent	do.....	1, 500. 00	do.....	1, 500. 00	Havre de Grace, Md., station and division of fisheries.
Rawlett, J. W.	Laborer	July 1 to 15, 1888	1. 25	Per day.....	4. 37	Fish-ponds, Washington, D. C.
Do.	do	July 16, 1888, to June 19, 1889	1. 50	do.....	201. 00	Do.
Reed, James	Watchman	Nov. 7 to Dec. 14, 1888; Apr. 13 to May 10, 1889.	1. 50	do.....	99. 00	Alpena, Mich.
Reed, Sydney	Seaman	July 1 to Sept. 10, 1888	45. 00	Per month.....	105. 00	Schooner <i>Grampus</i> .
Robbins, O. D.	Clerk	Sept. 18 to 30, 1888	1. 00	Per day.....	12. 50	Clackamas, Oregon.
Do.	do	Oct. 18 to Nov. 16, 1888	1. 25	do.....	27. 50	Do.
Robinson, E. M.	Expert fish-culturist	July 1 to Sept. 30, 1888	100. 00	Per month.....	300. 00	Wood's Holl, Mass.
Do.	Station superintendent	Oct. 1, 1888, to Mar. 31, 1889	100. 00	do.....	600. 00	Gloucester, Mass.
Do.	Expert fish-culturist	Apr. 1 to June 30, 1889	100. 00	do.....	300. 00	Central Station.
Robinson, Washington	Office janitor	July 1, 1888, to June 30, 1889	50. 00	do.....	600. 00	Central office.
Rockwell, Julia L.	Clerk	do.....	70. 00	do.....	840. 00	Office of records.
Rogers, E. I.	Draughtsman	do.....	75. 00	do.....	900. 00	Engineer office.
Rogers, Frank	Seaman	Jan. 1 to Feb. 28, 1889	45. 00	do.....	90. 00	Schooner <i>Grampus</i> .
Rogers, O. V.	Laborer	do.....	1. 75	Per day.....	96. 25	Cold Spring Harbor, N. Y.

FISCAL YEAR, 1888-'89—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Root, A. W.	Assistant	July 1, 1888, to June 30, 1889	\$50.00	Per month	\$600.00	Northville, Mich.
Root, M. S.	do	July 1 to Dec. 14, 1888	50.00	do	272.58	Do.
Do	Foreman	Dec. 15, 1888, to Mar. 15, 1889	75.00	do	227.42	Duluth, Minn.
Royer, J. Charles	Laborer	Sept. 16 to 30, 1888	42.50	do	21.25	Clackamas Oregon.
Do	do	Oct., 1888	47.50	do	47.50	Do.
Do	do	Nov. 1 to 14, 1888	1.60	Per day	22.40	Do.
Royster, J. H.	Distribution messenger	May 6 to 31, 1889	60.00	Per month	50.32	Car No. 3.
Ryder, John A.	Embryologist	July 1 to Sept. 30, 1888	150.00	do	450.00	Wood's Holl, Mass.
Sarah, Indian	Laborer	Sept. 1, 1888, to Feb. 27, 1889	1.00	Per day	141.25	Baird, Cal.
Saunders, R.	do	Apr. 16 to June 8, 1889	1.25	do	55.62	Neosho, Mo.
Saunderson, James	Spawn-taker	Oct. 29 to Nov. 25, 1888	2.00	do	56.00	Sandusky, Ohio.
Sauerhoff, W. R.	Machinist	July 1 to Oct. 31, 1888	80.00	Per month	320.00	Steamer <i>Fish Hawk</i> .
Do	do	Nov., 1888	80.00	do	80.00	Havre de Grace, Md.
Do	do	Dec. 1, 1888, to Feb. 28, 1889	80.00	do	240.00	Central Station.
Do	do	Mar. 1 to June 30, 1889	80.00	do	320.00	Launch <i>Blue Wing</i> .
Sauerhoff, W. P.	Carpenter; fish-culturist	Feb. 1 to Apr. 15, 1889	75.00	do	187.50	Central Station.
Do	do	Apr. 16 to May 31, 1889	75.00	do	112.50	Havre de Grace, Md.
Do	do	June, 1889	75.00	do	75.00	Fort Washington, Md.
Scudder, Charles W.	Clerk	July 1, 1888, to June 30, 1889	1, 100.00	Per year	1, 100.00	Offices of records and of Commissioner.
Scott, I. W.	Cook	June 4 to 30, 1889	45.00	Per month	40.50	Car No. 3.
Seagle, George A.	Station superintendent	July 1, 1888, to June 30, 1889	100.00	do	1, 200.00	Wytheville, Va.
Seal, William P.	Superintendent of aquaria	Nov. 1, 1888, to June 30, 1889	125.00	do	1, 200.00	Central Station.
Shaw, Thomas	Seaman	Feb. 9 to May 13, 1889	45.00	do	141.01	Schooner <i>Grampus</i> .
Sherman, John	Special assistant	Aug., 1888	30.00	do	30.00	Investigating inland lakes of Michigan.
Shorter, H. B.	Cook	Oct. 13, 1888, to Feb. 28, 1889	45.00	do	206.13	Gloucester, Mass.
Do	do	Mar., 1889	45.00	do	45.00	Wood's Holl, Mass.
Simmons, Newton	Car captain	July 1, 1888, to June 30, 1889	100.00	do	1, 200.00	Car No. 1.
Sly, A.	Spawn-taker	Oct. 29 to Nov. 28, 1888; Apr. 9 to 19, 1889	2.00	Per day	82.00	Sandusky, Ohio.
Smiley, Charles W.	Clerk in charge	July 1, 1888, to June 30, 1889	2, 000.00	Per year	2, 000.00	Office of records and publications.
Smith, Miss A. W.	Clerk	do	60.00	Per month	720.00	Office of accounts.
Smith, H. M.	do	do	100.00	do	1, 200.00	Division of fisheries.
Smith, John	Cook	July 1, 1888, to Mar. 20, 1889	45.00	do	389.03	Car No. 3.
Do	do	Apr. 8 to June 8, 1889	40.00	do	81.32	Fort Washington, Md.
Smith, J. H.	Laborer	Mar. 19 to May 23, 1889	1.25	Per day	53.23	Neosho, Mo.
Snell, Merwin-Marie	Clerk	July 1, 1888, to Feb. 28, 1889	60.00	Per month	480.00	Division of fisheries.
Do	do	Mar. 1 to June 30, 1889	75.00	do	300.00	Do.
Snow, Christopher	Cook	Mar. 6 to May 4, 1889	39.00	do	83.03	Wood's Holl, Mass.
Solvins, Anders	Laborer	July 1 to Oct. 31, 1888	40.00	do	160.00	Do.
Do	do	Nov. 1, 1888, to June 30, 1889	45.00	do	360.00	Do.
Spearing, Samuel	Cook	Mar. 19 to 31; Apr. 20 to May 31, 1889	45.00	do	72.87	Car No. 3.

Spencer, Charles.....	Spawn-faker.....	Apr. 15 to May 15, 1889.....	55.00	do.....	55.94	Fort Washington, Md.
Spurgeon, King.....	Laborer.....	Sept. 16 to 30, 1888.....	44.00	do.....	22.00	Clackamas, Oregon.
Do.....	do.....	Oct., 1888.....	47.50	do.....	47.50	Do.
Do.....	do.....	Nov. 1 to 14, 1888.....	1.60	Per day.....	22.40	Do.
Do.....	do.....	May 15 to 31, 1889.....	1.72	do.....	25.80	Do.
Do.....	do.....	June, 1889.....	46.50	Per month.....	46.50	Do.
Stevenson, Charles H.....	Field agent (statistics).....	May 2 to June 30, 1889.....	30.00	do.....	59.03	Division of fisheries.
Stocks, Bessie S.....	Copyist.....	Jan. 22 to June 30, 1889.....	40.00	do.....	212.90	Office of Commissioner.
Stoerzer, A. J.....	Office messenger.....	July 1, 1888, to June 30, 1889.....	30.00	do.....	360.00	Office of records and publications.
Stone, Livingston.....	Field superintendent.....	do.....	2,000.00	Per year.....	2,000.00	Pacific coast stations.
Stuart, William E.....	Temperature observer.....	do.....	15.00	Per month.....	180.00	Potomac River.
Sumption, Thomas M.....	Distribution messenger.....	Apr. 18 to May 28, 1889.....	45.00	do.....	60.14	
Sweeney, R. O.....	Station superintendent.....	Sept. 9, 1888, to May 31, 1889.....	125.00	do.....	1,291.66	Duluth, Minn.
Sweeney, R. O., jr.....	Machinist.....	Nov. 1, 1888, to May 31, 1889.....	70.00	do.....	490.60	Do.
Swinson, William.....	Seaman.....	Nov. 1 to 19, 1888.....	45.00	do.....	28.50	Schooner <i>Grampus</i> .
Tennent, E. S.....	Clerk.....	July 1 to Sept. 23, 1888.....	69.00	do.....	190.90	Property office.
Terrell, L. D.....	do.....	July 1 to Oct. 31, 1888.....	83.33	do.....	333.32	Division of fish culture.
Do.....	Assistant at hatchery.....	Nov. 1, 1888, to Mar. 31, 1889.....	83.33	do.....	499.98	Gloucester, Mass.
Do.....	do.....	Apr. 1 to June 7, 1889.....	83.33	do.....	186.10	Havre de Grace, Md.
Thorn, Allie.....	Laborer.....	July 16 to Aug. 31, 1888; Feb. 13 to Apr. 7, 1889.....	1.50	Per day.....	69.37	Fish-ponds, Washington, D. C.
Timbers, Robert.....	do.....	July 1 to Dec. 31, 1888.....	45.00	Per month.....	270.00	Central Station.
Do.....	do.....	Jan. 1 to June 30, 1889.....	60.00	do.....	360.00	Do.
Tolbert, George H.....	Superintendent of construction.....	July 1 to Dec. 16, 1888.....	100.00	do.....	551.61	Duluth, Minn.
Do.....	Carpenter and fish-culturist.....	Dec. 17, 1888, to Mar. 15, 1889.....	80.00	do.....	237.42	Central Station.
Do.....	Foreman of construction.....	Mar. 16 to June 30, 1889.....	100.00	do.....	351.61	Neosho, Mo.
Townsend, Charles H.....	Assistant.....	July 1 to Sept. 30, 1888.....	100.00	do.....	300.00	Steamer <i>Albatross</i> .
Do.....	do.....	Oct. 1888.....	120.00	do.....	120.00	Do.
Do.....	do.....	Nov. 1, 1888, to June 30, 1889.....	140.00	do.....	1,120.00	Do.
Trenholm, J. D.....	Distribution messenger.....	July 1, 1883, to Mar. 20, 1889.....	60.00	do.....	518.71	Car No. 3.
Tulian, E. A.....	Assistant at hatchery.....	Oct. 13, 1888, to May 18, 1889.....	50.00	do.....	359.67	Alpena, Mich.
Tune, M. N.....	Janitor.....	July 1 to Dec. 31, 1888.....	50.00	do.....	300.00	Offices.
Do.....	Watchman.....	Jan. 1 to June 30, 1889.....	50.00	do.....	300.00	Central Station.
Utiger, P.....	Fisherman.....	Aug. 28 to 31, 1888.....	1.75	Per day.....	7.00	Clackamas, Oregon.
Do.....	Laborer.....	Sept., 1888.....	54.00	Per month.....	54.00	Do.
Do.....	do.....	Oct. to Nov. 14, 1888.....	1.75	Per day.....	75.25	Do.
Verrill, A. E.....	Assistant.....	July, 1888.....	125.00	Per month.....	125.00	Special investigation, New Haven, Conn.
Vradenburgh, E.....	Engineer.....	Nov. 1, 1888, to Jan. 31, 1889.....	45.00	do.....	135.00	Northville, Mich.
Wade, W. S.....	Distribution messenger.....	Apr. 25, to June 30, 1889.....	45.00	do.....	99.00	Car No. 3.
Walden, W. B.....	Laborer.....	Jan., 1889.....	3.00	Per day.....	55.50	Baird, Cal.
Walters, C. H.....	do.....	Jan. 1 to Feb. 28, 1889.....	2.00	do.....	118.00	Cold Spring Harbor, N. Y.
Ward, James.....	Cook.....	Apr. 27 to 30, 1889.....	45.00	Per month.....	6.00	Havre de Grace, Md.
Do.....	do.....	May, 1889.....	45.00	do.....	45.00	Car No. 1.
Ward, J. M.....	Laborer.....	Oct. 16 to Nov. 15, 1888.....	1.50	Per day.....	36.75	Fish-ponds, Washington, D. C.
Ward, W. C.....	Mechanic.....	July 16 to Sept. 30, 1888.....	57.50	Per month.....	143.75	Clackamas, Oregon.
Do.....	Laborer.....	Oct., 1888.....	2.10	Per day.....	58.80	Do.
Watkins, Thomas.....	Messenger.....	July, 1888.....	40.00	Per month.....	40.00	Division of scientific inquiry
Wheeler, S.....	Head fisherman.....	Aug. 21 to 31, 1888.....	2.00	Per day.....	22.00	Clackamas, Oregon.
Do.....	do.....	Sept. 1 to Oct. 31, 1888.....	62.50	Per month.....	125.00	Do.
Do.....	do.....	Nov. 1 to 14, 1888.....	2.10	Per day.....	29.40	Do.
Do.....	Laborer.....	Mar. 13 to 23, 1889.....	2.10	do.....	19.95	Do.

FISCAL YEAR 1888-'89—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Wheeler, S.....	Watchman.....	Apr. 19 to 30, 1889.....	\$2.30	Per day.....	\$23.00	Clackamas, Oregon.
Do.....	do.....	May 1 to 31, 1889.....	62.25	Per month.....	62.25	Do.
Do.....	do.....	June, 1889.....	61.50	do.....	61.50	Do.
Whitehurst, R.....	Laborer.....	Dec. 25, 1888, to Mar. 31, 1889.....	70.00	do.....	225.81	Baird, Cal.
Whitehouse, William R.....	Seaman.....	July 1 to 6, 1888.....	45.00	do.....	8.71	Schooner <i>Grampus</i> .
Wilcox, Ella C.....	Egg-picker.....	Nov. 5, 1888, to Jan. 12, 1889.....	.75	Per day.....	41.25	Michigan stations.
Wilcox, W. A.....	Clerk.....	July 1 to Aug. 16, 1888.....	125.00	Per month.....	187.50	Division of fisheries.
Do.....	Assistant.....	Nov. 15, 1888, to June 30, 1889.....	115.00	do.....	866.33	Do.
Williams, George.....	Cook.....	July 1, 1888, to June 30, 1889.....	45.00	do.....	494.27	Car No. 2.
Williams, George B., Jr.....	Station superintendent.....	do.....	125.00	do.....	1,250.00	Baird, Cal.
Williams, H. D.....	Clerk accountant.....	July 1 to Nov. 30, 1888.....	100.00	do.....	500.00	Office of accounts.
Willis, Robert T.....	Cook.....	Jan. 1 to Feb. 28, 1889.....	45.00	do.....	90.00	Car No. 1.
Wilson, Henry V.....	Assistant.....	May 17 to June 30, 1889.....	100.00	do.....	148.39	Scientific inquiry, Wood's Holl, Mass.
Wilson, J. Paul.....	Clerk in charge.....	July 1, 1888, to June 30, 1889.....	2,000.00	Per annum.....	2,000.00	Office of property.
Wires, S. P.....	Foreman.....	do.....	75.00	Per month.....	900.00	Alpena, Mich.
Wonson, Charles H.....	Ship's writer.....	Nov. 8 to 19, Dec. 6, 1888, to June 30, 1889.....	60.00	do.....	434.32	Schooner <i>Grampus</i> .
Worth, S. G.....	Station superintendent.....	July 1, 1888, to June 30, 1889.....	125.00	do.....	1,500.00	Central Station.
Yeatman, P. T.....	Assistant.....	Aug. 1, 1888, to June 30, 1889.....	60.00	do.....	720.00	Do.
Youngblood, Louis.....	Spawn-taker.....	Oct. 29 to Dec. 1, 1888.....	2.00	Per day.....	68.00	Michigan stations.
Adams, Charles.....	do.....	Oct. 31 to Dec. 1, 1888.....	2.00	do.....	64.00	Do.
Amanda, Indian.....	Laborer.....	Nov. 12 to Dec. 27, 1888.....	1.00	do.....	43.25	Baird, Cal.
Arbergast, Edward.....	do.....	Apr. 1, 1888, to Mar. 30, 1889.....	1.25	do.....	25.00	Neosho, Mo.
Atkinson, W. R.....	do.....	May 1 to 7, 1888.....	1.25	do.....	6.87	Do.
Axtell, George.....	Spawn-taker.....	Apr. 15 to 22, 1889.....	2.00	do.....	16.00	Sandusky, Ohio.
Babson, Fitz J.....	Carpenter (furnished).....	Aug. 15 to Sept. 8, 1888.....	3.00	do.....	123.30	Gloucester, Mass.
Bagley, J. A.....	Laborer.....	Oct. 22 to Nov. 20, 1888.....	1.75	do.....	43.75	Maine stations.
Baker, O. E.....	Foreman.....	Mar. 19 to Apr. 6, 1889.....	2.50	do.....	33.75	Construction of hatchery, Neosho, Mo.
Baldwin, E. J.....	Carpenter.....	May 7 to June 15, 1889.....	2.00	do.....	70.00	Construction, Neosho, Mo.
Banks, T. W.....	do.....	June 3 to 15, 1889.....	2.00	do.....	23.00	Do.
Baur, Frank.....	Laborer.....	Nov. 2, 1888.....	1.50	do.....	1.50	Central Station.
Bendae, Jean.....	do.....	Jan. 10 to 19, 1889.....	2.15	do.....	15.05	Construction, Duluth, Minn.
Berkland, Fred.....	Carpenter.....	Sept. 26, 1888.....	2.75	do.....	2.75	Do.
Billy Miles, Indian.....	Laborer.....	Sept. 1 to 21, 1888.....	1.00	do.....	21.00	Baird, Cal.
Blair, David.....	do.....	Aug. 20 to Sept. 21, 1888.....	1.00	do.....	31.50	Do.
Borgeson, Thomas.....	Assistant spawn-taker.....	Nov. 3 to 21, 1888.....	1.00	do.....	19.00	Michigan stations.
Boyd, C. W.....	Laborer.....	Feb. 19 and 20, 1889.....	2.00	do.....	4.00	Duluth, Minn.
Brown, W. H.....	do.....	July 13 to 16, 1888.....	2.00	do.....	6.00	Construction, Duluth, Minn.
Brown, Albert.....	do.....	Oct. 8 to 17, 1888.....	1.75	do.....	14.87	Clackamas, Oregon.
Burgess, Isaac M.....	do.....	July 2 to 7, 1888.....	1.50	do.....	7.50	Fish-ponds, Washington, D. C.
	Pilot.....	Dec. 3 to 5, 1888.....	2.50	do.....	7.50	Schooner, <i>Grampus</i> .

Butler, Charles H.	Laborer	Nov. 30, 1888	1.50	do	1.50	St. Jerome's, Md.
Calchoon, E. A.	do	Nov. 7 to 17, 1888	1.00	do	10.00	Baird, Cal.
Calkins, A. S.	Spawn-taker	Nov. 28 to Dec. 4, 1888	2.00	do	14.00	Michigan stations.
Carroll, John	Assistant	Nov. 8 to 17, 1888	1.50	do	12.00	Do.
Carter, Asa	Laborer	Apr. 9 to 20, 1889	1.25	do	12.12	Neosho, Mo.
Charlie, Indian	Carpenter	June 8 to 15, 1889	2.00	do	20.00	Construction, Neosho, Mo.
Coffin, Charles B.	Laborer	Nov. 16, 1888, to Jan. 28, 1889	1.00	do	23.00	Baird, Cal.
Combs, J. M.	Cook	Aug. 10 to Sept. 10, 1888	1.61½	do	50.00	Gloucester, Mass.
Corbin, John	Carpenter	May 27 to June 15, 1889	2.00	do	36.00	Construction, Neosho, Mo.
Corey, R. M.	Cook	Dec. 11 to 15, 1888	1.50	do	7.50	Car No. 3.
Corti, Luis	Spawn-taker	Nov. 17 to 20, 1888	2.00	do	8.00	Michigan stations.
Do	Laborer	Sept. 26 to Oct. 24, 1888	1.75	do	27.12	Construction, Duluth, Minn.
Covert, Minnie	do	Nov. 2 to 30, 1888	2.15	do	52.68	Do.
	Egg-picker	Nov. 13 to 17, 1888; Jan. 12 to 31, 1889	.75	do	17.63	Michigan stations.
Cross, Charles	Laborer	Sept. 1, 1888	1.50	do	1.50	Do.
Davis, Robert A.	Spawn-taker	Apr. 16 to 30, 1889	45.00	Per month	22.50	Havre de Grace, Md.
Davis, Willie, Indian	Laborer	Sept. 1 to Oct. 31, 1888	8.00	do	16.00	Baird, Cal.
Dalton, R. W.	do	May 8 to June 15, 1889	1.25	Per day	18.75	Construction, Neosho, Mo.
Dean, Ben L.	do	Sept. 1 to 29, 1888	1.50	do	34.05	Michigan stations.
Dean, May J.	Egg-picker	Nov. 5, 1888, to Jan., 1889	.75	do	27.75	Do.
Dodge, E. J.	Spawn-taker	Nov. 15 to 25, 1888	2.00	do	20.00	Sandusky, Ohio.
Doller, Valentine	do	Nov. 1 to 24, 1888; Apr. 14 to 19, 1889	2.00	do	50.00	Do.
Edwards, George	Laborer	Mar. 19 to Apr. 13, 1889	1.25	do	20.00	Neosho, Mo.
Elsenore, W. H.	do	Oct. 9 to Nov. 20, 1888	1.75	do	42.87	Maine stations.
Enos, T. A.	do	Apr. 8 to 25, 1889	1.25	do	18.37	Neosho, Mo.
Evans, A.	do	Nov. 2, 1888	1.50	do	1.50	Central Station.
Fagan, John	Spawn-taker	Nov. 17 to 26, 1888	2.00	do	20.00	Michigan stations.
Fox, Simon	do	Apr. 15 to 18, 1889	2.00	do	8.00	Sandusky, Ohio.
Fox, Peter	do	do	2.00	do	8.00	Do.
Fox, Frank	do	Nov. 8 to 18, 1888	2.00	do	20.00	Do.
Forbs, Thomas	Laborer	July 1 to 31, 1888	1.50	do	24.75	Fish-ponds, Washington, D. C.
Gaines, William	do	Apr. 8 to May 3, 1889	1.25	do	22.50	Neosho, Mo.
Gibbs, Charles	do	Mar. 19 to Apr. 13, 1889	1.25	do	23.12	Do.
Gilman, Michael	do	Apr. 26 to 27, 1889	1.00	do	2.00	Wytheville, Va.
Goffin, William	Assistant	June 18 to 30, 1889	20.00	Per month	8.67	Scientific inquiry, Wood's Holl, Mass.
Goodwin, Charles	Foreman	Feb. 7 and 8, 1889	5.00	Per day	10.00	Schooner <i>Grampus</i> .
Gondread, Louis	Spawn-taker	Nov. 8 to 25, 1888	2.00	do	36.00	Michigan stations.
Graham, A. E.	Laborer	Sept. 10 to 11, 1888	2.50	do	5.00	Baird, Cal.
Graham, John	Spawn-taker	Nov. 23 to Dec. 3, 1888	2.00	do	22.00	Michigan stations.
Grin, Frank	Laborer	Nov. 5 to 10, 1888	1.50	do	9.00	Clackamas, Oregon.
Handy, T. W.	do	Nov. 19 to 26, 1888	3.00	do	19.50	Baird, Cal.
Harris, B. G.	Spawn-taker	Apr. 24 to May 15, 1889	55.00	Per month	39.44	Fort Washington, Md.
Harris, Z. V.	do	Apr. 4 to 30, 1889	45.00	do	40.50	Do.
Do	Assistant	May 1 to 31, 1889	45.00	do	45.00	Do.
Harry, Miles, Indian	Laborer	Sept. 1 to 21, 1888	1.00	Per day	21.00	Baird, Cal.
Hendryx, Ida	Egg-picker	Jan. 12 to 31, 1889	.75	do	12.75	Michigan stations.
Hilman, George D.	Laborer and watchman	Apr. 9 to 18, 1889	1.50	do	7.50	Fish-ponds, Washington, D. C.
Hinger, J. H.	Spawn-taker	Apr. 15 to 19, 1889	2.00	do	8.00	Sandusky, Ohio.
Holmes, James	Laborer	July 1 to 15, 1888	1.25	do	4.37	Fish-ponds, Washington, D. C.
Horan, W. H.	do	Apr. 25 to May 20, 1889	45.00	Per month	38.03	Central Station.

FISCAL YEAR 1888-'89—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Howard, Jackson	Janitor	Feb. 14 to 18, 1889	\$1.50	Per day	\$6.00	Central offices.
Howard, William	Laborer	Feb. 23, 1889	1.50	do	.75	Central Station.
Howley, E. M.	do	Nov. 1 to 14, 1888	1.75	do	22.75	Clackamas, Oregon.
Howlett, H. H.	Carpenter	Nov. 16 to 21, 1888	2.50	do	10.00	Havre de Grace, Md.
Hudspeth, J. L.	Laborer	May 20 to 25, 1889	1.25	do	7.50	Construction, Neosho, Mo.
Huntsbayer, E. L.	Stone-mason	Apr. 16 to 25, 1889	3.00	do	18.00	Neosho, Mo.
Imel, Willie	Laborer	Sept. 20 to 24, 1888	1.92	do	9.60	Clackamas, Oregon.
Jackson, Richard	do	June 17 to 29, 1889	1.25	do	14.37	Central Station.
Jessop, Albert	Night watchman	Nov. 7 to Dec. 1, 1888	2.00	do	50.00	Michigan stations.
Johnson, B. F.	Laborer	May 22 to June 7, 1889	1.25	do	12.50	Construction, Neosho, Mo.
Johnson, J. C.	do	Mar. 29 and 30, 1889	1.25	do	2.50	Neosho, Mo.
John, Indian	do	Dec. 3 to 5, 1888	1.00	do	2.50	Baird, Cal.
Keish, Henry	Carpenter	May 24 to 25, 1889	2.00	do	3.00	Construction, Neosho, Mo.
Kencherra, Indian	Laborer	Apr. 1 to 23, 1889	1.25	do	25.00	Baird, Cal.
Ladd, W. H.	Spawm-taker	Nov. 15 to 20, 1888	2.00	do	10.00	Sandusky, Ohio.
Ladd, Walter	do	Apr. 14 to 19, 1889	2.00	do	10.00	Do.
Lay, W. M.	Laborer	May 1 to 4, 1889	1.25	do	5.00	Neosho, Mo.
Do	do	May 6 to 7, 1889	1.25	do	1.87	Construction, Neosho, Mo.
Leach, Charles F.	Carpenter	June 18 to 20, 1889	3.00	do	9.00	Office of scientific inquiry.
Lehman, George M.	Distribution messenger	Mar. 13 to 20, 1889	45.00	Per month	11.61	Central Station.
Lewis, Wrotten	Laborer	Feb. 16, 1889	1.75	Per day	1.75	Do.
Do	do	Feb. 27 to 28, 1889	1.50	do	1.75	Construction, Duluth, Minn.
Lindberg, Lonis	do	Sept. 28 to Oct. 24, 1888	1.75	do	20.12	Central Station.
Locks, Albert	do	Feb. 28 to Mar. 2, 1889	1.50	do	3.75	Maire stations.
Longdon, Ernest O.	Assistant engineer	Oct. 15 to 18, 1888	1.25	do	5.00	Baird, Cal.
Lydia, Indian	Laborer	Dec. 18 to 30, 1888	1.00	do	12.75	Maine stations.
McClure, J.	do	Sept. 15 to Nov. 20, 1888	1.50	do	36.37	Michigan stations.
McDongall, W. H.	Spawm-taker	Nov. 1 to 21, 1888	2.00	do	42.00	Do.
McDowell, J. C.	do	Nov. 29 to Dec. 4, 1888	2.00	do	12.00	Baird, Cal.
McKenzie, David	Laborer	Dec. 4 to 12, 1888	3.00	do	24.00	Neosho, Mo.
McKee, John	Assistant surveyor	Jan. 18 to 30, 1889	5.00	do	42.50	Clackamas, Oregon.
MacKenzie, James	Teamster	Nov. 7 to 14, 1888	4.00	do	26.00	Do.
MacKenzie, M.	Laborer	Sept. 16 to 22; Nov. 4 to 13, 1888	2.00	do	28.30	Baird, Cal.
Mary, Indian	do	Dec. 1 to 10, 1888	1.00	do	10.00	Michigan stations.
Master, Alois	Spawm-taker	Nov. 6 to 11, 1888	2.00	do	12.00	Clackamas, Oregon.
Mattoon, E.	Laborer	Sept. 17 to 22, 1888	1.98	do	10.89	Baird, Cal.
Miles, Billy, Indian	do	Oct. 8 to 16; Nov. 1 to 3, 1888	1.00	do	20.00	Do.
Miles, Harry, Indian	do	Oct. 15 to 31; Nov. 1 to 13, 1888	1.00	do	29.00	Duluth, Minn.
Millon-rini, Stivan	do	Jan. 10 to 19, 1889	2.15	do	15.05	Havre de Grace, Md.
Mit-hell, H. T.	Carpenter	Nov. 8 to 21, 1888	2.50	do	22.50	Fort Washington, Md.
Montgomery, Ben	Laborer	Mar. 29 and 30, 1889	1.00	do	2.00	Fish-ponds, Washington, D. C.
Mooney, Henry J.	do	Sept. 1 to Oct. 5, 1888	1.50	do	38.85	

Morgal, Morris	do	Feb. 13 to 18, 1889	1.50	do	5.25	Do.
Morgan, Oliver A.	Carpenter	Nov. 8 to 21, 1888	2.50	do	22.50	Havre de Grace, Md.
Mose, Indian	Laborer	Aug. 8 to Sept. 21, 1888	1.00	do	33.00	Baird, Cal.
Moseley, T. E.	Carpenter	June 5 to 8, 1889	2.00	do	7.00	Construction, Neosho, Mo.
Munson, W. H.	Assistant	July 5 to 31, 1888	45.00	Per month	39.19	Maine stations.
Nunyoop-cha, Indian	Laborer	Oct. 8 to 17; Nov. 12 to 16, 1888	1.00	Per day	13.25	Baird, Cal.
Newton, O.	Spawm-taker	Nov. 10 to 14, 1888	2.00	do	10.00	Michigan stations.
Nolan, John	do	Nov. 8 to 10, 1888	2.00	do	6.00	Do.
Palmer, Georgia	Egg-picker	Jan. 12 to 15, 1889	.75	do	2.25	Do.
Parker, Albert	Spawm-taker	Nov. 1 to 25, 1888	2.00	do	30.00	Sandusky, Ohio.
Parr, W. W.	Laborer	May 13 to 18, and 20 to 22, 1889	1.25	do	11.25	Construction, Neosho, Mo.
Peyton, Albert	do	June 17 to 29, 1889	1.25	do	14.37	Central Station.
Poe, J. C.	do	May 27 to June 1, 1889	1.25	do	7.50	Construction, Neosho, Mo.
Prewett, Arthur	Carpenter	Oct. 11 to 27; Oct. 29 to Nov. 1, 1888	2.75	do	52.25	Construction, Duluth, Minn.
Pulaski, Edward	Laborer	Jan. 8 to 14, 1889	2.00	do	12.00	Central Station.
Pusch, Julius	do	Oct. 7 to 17, 1888	1.75	do	16.62	Clackamas, Oregon.
Rhea, R. B.	Surveyor	Jan. 18 to Feb. 7, 1889	2.50	do	23.75	Neosho, Mo.
Richardson, D. C.	Painter	July 23 to 31, 1888	3.25	do	26.00	Clackamas, Oregon.
Ripley, C. B.	Laborer	Oct. 9 to Nov. 17, 1888	1.75	do	48.13	Maine stations.
Robinson, John	do	Sept. 8 to 24, 1888	1.92	do	32.64	Clackamas Oregon.
Root, Frank D.	Egg-picker	Jan. 12 to 15, 1889	.75	do	2.25	Michigan stations.
Seagle, J. B.	Carpenter	Nov. 28 to Dec. 30, 1888	1.75	do	26.25	Wytheville, Va.
Sheehan, Lawrence	Laborer	July 13 to 16, 1888	2.00	do	5.00	Construction, Duluth, Minn.
Siffield, R.	Spawm-taker	Nov. 1 to 25, 1888	2.00	do	50.00	Sandusky, Ohio.
Slater, Jacob	Carpenter	June 18 to 20, 1889	3.00	do	9.00	Office of scientific inquiry.
Smith, E. S.	do	Dec. 5 to 20, 1888	2.25	do	31.50	Central Station.
Spilman, Thomas	Laborer and watchman	Apr. 9 to 18, 1889	1.50	do	7.50	Fish-ponds, Washington, D. C.
Stark, John	Spawm-taker	Nov. 6 to 16, 1888	2.00	do	22.00	Michigan stations.
Stewart, Fred	do	Oct. 27 to Dec. 1, 1888	2.00	do	73.00	Do.
Stewart, Frankie	Egg-picker	Nov. 12 to 27, 1888; June 12 to 15, 1889	.75	do	9.75	Do.
Stewart, M. L.	Laborer	May 6 to 10, 1889	1.25	do	6.25	Construction, Neosho, Mo.
Stone, John H.	Carpenter	Nov. 12 to 23, 1888	2.50	do	18.75	Havre de Grace, Md.
Stone, John	Spawm-taker	Nov. 1 to 27, 1888	2.00	do	50.00	Sandusky, Ohio.
Stout, John	Laborer	Mar. 19 to Apr. 13, 1889	1.25	do	25.00	Neosho, Mo.
Suatt, John W.	do	Sept. 17 to 22, 1888	1.98	do	10.89	Clackamas, Oregon.
Sutton, Mary	Egg-picker	Jan. 12 to 15, 1889	.75	do	2.25	Michigan stations.
Thoma, W.	Laborer	Jan. 10 to 14, 1889	1.50	do	6.00	Central Station.
Thomas, James	do	Sept. 1 to 30, 1888	1.50	do	31.28	Fish-ponds, Washington, D. C.
Truax, John	Carpenter	Oct. 9 to 27, 1888	2.75	do	46.75	Construction, Duluth, Minn.
Tyrney, John	Spawm-taker	Nov. 15 to 20, 1888	2.00	do	10.00	Sandusky, Ohio.
Uiquhart, J. G.	Distribution messenger	May 1 to 31, 1889	45.00	Per month	45.00	
Walker, George W.	Carpenter	Nov. 8 to 23, 1888	2.50	Per day	25.00	Havre de Grace, Md.
Ward, E. C.	do	Oct. 22 to 31, 1888	2.75	do	13.75	Construction, Duluth, Minn.
Watkins, C. H.	Laborer	Nov. 7 to 30, 1888	3.00	do	68.25	Baird, Cal.
Wight, Clarence A.	Assistant	Sept. 1 to Oct. 8, 1888	2.00	do	45.00	Construction, Maine stations.
Wight, D. E.	Carpenter	Oct. 1 to 13, 1888	2.00	do	10.00	Maine.
Willie, Indian	Laborer	Aug. 1 to 31, 1888	8.00	Per month	8.00	Baird, Cal.
Wintermyre, T. J.	do	Aug. 1 to 31, 1888	1.50	Per day	39.00	Fish-ponds, Washington, D. C.
Wood, Joseph	do	Aug. 18 to 31, 1888	1.75	do	24.50	Clackamas, Oregon.
Wood, T. Bertram	do	Jan. 22 to 25, 1889	1.50	do	5.25	Michigan stations.
Woolferider, Glenn	Surveyor	Jan. 18 to Feb. 7, 1889	2.00	do	19.00	Neosho, Mo.

FISCAL YEAR 1888-'89—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Wrightson, J. B.	Laborer.	Nov. 30, 1888	\$1.50	Per day	\$1.50	St. Jerome's, Md.
					149, 135.79	

FISCAL YEAR 1889-'90.

Abbott, W. H.	Clerk	July 1, 1889, to Jan. 31, 1890	65.00	Per month	455.00	Division of fisheries.
Do.	do	Feb. 1 to June 30, 1890	75.00	do	375.00	Do.
Adams, C. B. S.	Assistant	July 1 to Aug. 31, 1889	100.00	do	200.00	Steamer <i>Fish Hawk</i> .
Adams, A. C.	Captain	July 1, 1889, to June 30, 1890	115.00	do	1,380.00	Schooner <i>Grampus</i> .
Addison, Anthony C.	Examiner of accounts	do	125.00	do	1,500.00	Office of accounts.
Alexander, A. B.	Fishery expert	do	100.00	do	1,200.00	Steamer <i>Albatross</i> .
Andrews, E. J.	Laborer	May 24 to 30, 1890	3.00	Per day	17.00	Baird, Cal.
Andrews, William M.	do	Dec. 10, 1889; Jan. 2 to 4, 1890	.20	Per hour	5.50	Inquiry, interior waters.
Ansdall, F. Van	do	May 1 to 16, 1890	1.50	Per day	24.00	Cold Springs Harbor, N. Y.
Apperson, W.	Collecting fishes	Nov. 11 to 14, 1889	1.50	do	4.50	Mississippi basin.
Atkins, Charles G.	Superintendent of stations	July 1, 1889, to June 30, 1890	150.00	Per month	1,800.00	Maine stations.
Austin, Joseph	Spawn-taker	Nov. 12 to 24, 1889	2.00	Per day	26.00	Michigan stations.
Axtell, George	do	Nov. 1 to 27, 1889; Apr. 11 to 23, 1890	2.00	do	76.00	Sandusky, Ohio.
Bagley, J. A.	Laborer	Oct. 24 to Nov. 23, 1889	1.75	do	43.76	Maine stations.
Baldridge, L. E.	do	July 11 to Nov. 16, 1889	1.25	do	98.74	Construction, Neosho, Mo.
Do	Watchman	Nov. 18, 1889, to June 30, 1890	40.00	Per month	297.33	Do.
Bale, W. A.	Collecting fishes	July 22 to Aug. 2, 1889	1.75	Per day	10.40	Mississippi basin.
Do	do	Nov. 29 and 30, 1889	1.50	Per night	3.00	Do.
Banks, T. W.	Carpenter	Oct. 9 to Nov. 21, 1889	2.00	Per day	64.00	Construction, Neosho, Mo.
Do	do	Nov. 11, 1889, to June 7, 1890	2.00	do	79.50	Neosho, Mo.
Do	Laborer	Jan. 29 and 30, 1889	1.25	do	2.50	Do.
Barbour, S. S.	Cook	July 1, 1889, to June 30, 1890	50.00	Per month	600.00	Schooner <i>Grampus</i> .
Barley, Jennie	Picking eggs	Dec. 18 to 27, 1889	.75	Per day	5.63	Northville, Mich.
Barr, J. W.	Laborer	Apr. 7 to June 28, 1890	1.25	do	102.50	Neosho, Mo.
Barry, Miss Nellie B.	Copyist	Feb. 1 to June 30, 1890	40.00	Per month	200.00	Office of distribution.
Barry, Patrick	Laborer	July 1, 1889, to June 30, 1890	45.00	do	540.00	Wood's Holl, Mass.
Bartlett, S. P.	Agent in charge	do	150.00	do	1,800.00	Mississippi basin.
Bartram, Joseph	Moss gathering	Oct. 14 and 15, 1889	3.00	Per day	6.00	Northville, Mich.
Bass, J. L.	Carpenter	Aug. 1 to Nov. 30, 1889, Mar. 26 to Apr. 22, 1890.	3.00	do	352.00	Baird, Cal.

Bass, J. S. P.	Teamster	Apr. 4 to 17, 1890	\$4.00	do	\$14.50	Do.
Bass, L.	Carpenter	July 5 to 31, 1889	3.00	do	69.00	Do.
Bass, S. P.	Assistant at hatchery	Dec. 1 to 31, 1889	90.00	Per month	90.00	Do.
Bass, S. S.	Laborer	July 17 to Aug. 31, 1889	3.00	Per day	106.50	Do.
Do.	Foreman and assistant	Sept. 1, 1889, to May 31, 1890	90.00	Per month	720.00	Do.
Baur, J. P.	Laborer	Sept. 15 to 22, 1889	1.50	Per day	21.00	Fish-ponds, Washington, D. C.
Do.	do	Oct. 8, 1889, to Jan. 13, 1890	1.50	do	104.25	Aquaria, Central Station.
Do.	Spawn-taker	Apr. 4 to May 26, 1890	55.00	Per month	95.63	Launch No. 61, Fort Washington, Md.
Bean, T. H.	Ichthyologist	July 1 to Oct. 31, 1889	200.00	do	800.00	Inquiry, interior waters of Alaska.
Do.	do	Nov. 1, 1889, to June 30, 1890	200.00	do	1,600.00	Office of Commissioner.
Bellamy, A. H.	Watchman	Apr. 25 to May 12, 1890	2.00	Per day	34.00	Maine stations.
Ben, Indian	Laborer	July 8 to Oct. 10; Dec. 4 to 17, 1889	1.00	do	86.50	Baird, Cal.
Bené, Lue	do	July 15 to Aug. 23; Dec. 1 to 31, 1889	2.15	do	93.03	Duluth, Minn.
Do.	do	Aug. 24 to Oct. 31, 1889	2.00	do	114.00	Do.
Bennett, B.	Collecting fishes	Oct. 14 and 17, 1889	1.50	Per night	3.00	Mississippi basin.
Bennett, H.	Spawn-taker	Apr. 21 to May 22, 1890	55.00	Per month	57.27	Havre de Grace, Md.
Bennett, Rush	Collecting fishes	Sept. 10 and 13; Oct. 1 to 23, 1889	1.50	Per day	8.25	Mississippi basin.
Berbom, Egil	Seaman	July 1, 1889, to May 13, 1890	45.00	Per month	468.87	Schooner <i>Grampus</i> .
Beretta, J.	Machinist	Nov. 1 and 30, 1889	4.24	Per day	8.48	Steamer <i>Albatross</i> .
Berkley, B. A.	Laborer	Apr. 28 to May 17, 1890	1.25	do	22.50	Neosho, Mo.
Berry, Henry	Seine-mender	Apr. 1 to 30, 1890	60.00	Per month	60.00	Fort Washington, Md.
Bickford, E.	Spawn-taker	Nov. 4 to 24, 1889	2.00	Per day	40.00	Sandusky, Ohio.
Billy, Indian	Laborer	July 1 to Dec. 17, 1889	1.00	do	116.50	Baird, Cal.
Billy Miles, Indian	do	Apr. 16 to 30, 1890	1.00	do	12.75	Do.
Billy Silverthem, Indian	do	Sept. 1 to 17, 1889	1.00	do	6.50	Do.
Bishop, R.	do	Feb. 24 to May 10, 1890	1.25	do	76.56	Neosho, Mo.
Blair, Jennie A.	Egg picker	Nov. 21 to 23, 1889	.75	do	2.25	Northville, Mich.
Blaisdell, C. E.	Laborer	Oct. 3 to 31, 1889	1.25	do	22.50	Construction, Maine stations.
Blaisdell, E. E.	do	Nov. 1 to 26, 1889	1.25	do	13.25	Do.
Blaisdell, Frank	Draughtsman	July 1 to 7, 1889	150.00	Per month	33.87	Office of engineers.
Do.	do	July 8, 1889, to Apr. 30, 1890	100.00	do	977.42	Do.
Blaisdell, W. H.	Laborer	Oct. 1 to 31, 1889	1.25	Per day	13.75	Construction, Maine stations.
Blaisdell, William W.	do	Oct. 1 to Nov. 29, 1889	1.25	do	38.47	Do.
Boone, George	Cook	July 1 to Sept. 30, 1889	45.00	Per month	135.00	Car No. 1.
Booth, Franklin	Assistant	Oct. 15 to Nov. 23, 1889	125.00	do	375.00	Inquiry, interior waters of Alaska.
Borst, J. J.	Painter	Jan. 20 to Feb. 1, 1890	.25	Per hour	24.37	Construction, Neosho, Mo.
Do.	do	Aug. 28 to 31, 1889	.20	do	10.25	Neosho, Mo.
Bowden, S. N.	Laborer	Oct. 1 to 31, 1889	1.50	Per day	4.50	Maine stations.
Do.	do	Oct. 1 to 31, 1889	1.65	do	25.62	Do.
Bowen, Harry	Collecting fishes	July 22 to August 2, 1889	1.50	do	10.12	Mississippi Basin.
Bowles, George E.	Assistant at hatchery	Oct. 1 to Dec. 31, 1889; Jan. 1 to 4, 1890	60.00	Per month	173.21	Maine stations.
Bowser, James A.	Cook	June 29 and 30, 1890	45.00	do	3.00	Wood's Holl, Mass.
Bradley, Ella R.	Picking eggs	Nov. 2 to Dec. 31, 1889; Jan. 1 to Feb. 5, 1890	.75	Per day	59.26	Northville, Mich.
Bright, W. H.	Distribution messenger	Jan. 14 to May 17, 1890	60.00	Per month	247.74	Leadville, Colo.
Brittain, William H.	Messenger	July 1 to Oct. 9, 1889	35.00	do	115.16	Office of chief clerk.
Do.	Clerk	Oct. 10, 1889, to Apr. 14, 1890; June 1 to 30, 1890	35.00	do	251.17	Office of accounts.

FISCAL YEAR 1889-'90—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Brittain, William H	Messenger	Apr. 15 to May 31, 1890	\$45.00	Per month	\$69.00	Fort Washington, Md.
Britten, George	Collecting fishes	Nov. 20 and 21, 1889	1.50	Per night	3.00	Mississippi Basin.
Britten, Henry V	Laborer	Jan. 23 and 24, 1890	1.50	Per day	2.25	Northville, Mich.
Brittenham, O. N	do	Mar. 13 to May 3, 1890	1.25	do	31.25	Neosho, Mo.
Brooks, W. K	Special assistant	July 1 to Sept. 24, 1889	150.00	Per month	420.00	Wood's Holl, Mass.
Brown, Alex	Collecting fishes	July 22 to Aug. 9; Oct. 1 to Nov. 6, 1889	2.00	Per day	56.00	Mississippi Basin.
Brown, A. J.	Carpenter	July 1 to 10, 1889	2.00	do	18.00	Construction, Neosho, Mo.
Brown, E. E.	do	Apr. 21 to 25, 1890	3.40	do	17.00	Fort Washington, Md.
Brown, J. E.	Clerk	July 1, 1889, to June 30, 1890	1,200.00	Per annum	1,200.00	Office of distribution.
Brown, W. G.	Laborer	Apr. 21 to May 3, 1890	1.25	Per day	13.75	Neosho, Mo.
Bryan, E. C	Clerk	July 1, 1889, to June 30, 1890	100.00	Per month	1,200.00	Division of fisheries.
Buck, H. H	Assistant	July 1 to Sept. 30, 1889	100.00	do	300.00	Maine stations.
Do	Superintendent	Oct. 1 to Nov. 30, 1889; Jan. 1 to May 31, 1890	100.00	do	700.00	Construction, Maine stations.
Buck, W. O	Assistant	Sept. 1 to Nov. 30, 1889; Feb. 1 to 28, June 16 to 30, 1890	75.00	do	187.29	Maine stations.
Buckley, J. J.	Cabin-boy	June 1 to 30, 1890	35.00	do	35.00	Schooner <i>Grampus</i> .
Burdick, Charles H	Carpenter	Sept. 1 to 30, Nov. 1 to 15, 1889	2.75	Per day	68.75	Wood's Holl, Mass.
Burk, William	Distribution messenger	Oct. 21 to Nov. 16, 1889	1.50	do	30.00	Cars No. 1 and No. 2.
Do	Collecting fishes	Nov. 24 to 30, 1889	1.50	do	7.50	Mississippi Basin.
Butler, William J	Distribution messenger	May 7 to 26, 1890	45.00	Per month	29.03	Car No. 2.
Butler, George E	Janitor and messenger	July 1, 1889, to June 30, 1890	50.00	do	600.00	Central offices.
Butterfield, Montford	Spawn-taker	Nov. 1 to 11, 1889	2.00	Per day	22.00	Alpena, Mich.
Carnes, James	Painter	Jan. 27 to Feb. 1, 1890	12½	Per hour	5.06	Neosho, Mo.
Carnes, Will H	do	Jan. 20 to Feb. 17, 1890	.25	do	33.86	Do.
Carnes, Walter	do	Jan. 27 to Feb. 17, 1890	12½	do	10.56	Do.
Case, Frank B	Assistant	Apr. 9 to 30, 1890	1.50	Per day	33.00	Alpena, Mich.
Do	do	May 1 to 19, 1890	45.00	Per month	27.58	Do.
Center, H. R	Clerk	July 1, 1889, to June 30, 1890	100.00	do	1,200.00	Division of scientific inquiry.
Chatfield, John	Tidal observer	June 23 to 30, 1890	15.00	do	4.00	Steamer <i>Fish Hawk</i> , inquiry oyster-starfish.
Christensen, Charles	Seaman	May 16 to June 30, 1890	45.00	do	68.23	Schooner <i>Grampus</i> .
Clagett, A. M.	Spawn-taker	Apr. 22 to May 11, 1890	45.00	do	29.47	Fort Washington, Md.
Clair, Henry	Collecting fishes	Sept. 1 to 29, 1889	1.50	Per day	4.50	Mississippi Basin.
Clapp, George A	Laborer	July 1 to 3, 1889	3.00	do	9.00	Baird, Cal.
Clark, George T	Assistant in hatchery	Apr. 21 to May 22, 1890	60.00	Per month	62.46	Havre de Grace, Md.
Clark, Frank N	Station superintendent	July 1, 1889, to June 30, 1890	2,200.00	Per annum	2,200.00	Michigan stations.
Cleaver, Henry	Spawn-taker	Apr. 10 to 25, 1890	2.00	Per day	30.00	Sandusky, Ohio.
Cole, Edward	Cook's boy	Apr. 22 to May 22, 1890	20.00	Per month	20.19	Havre de Grace, Md.
Cole, W	Cabin-boy	May 26 to June 30, 1890	25.00	do	29.84	Steamer <i>Fish Hawk</i> .

Name	Position	Period	Pay	Remarks	Station
Cook, David S.	Seaman	July 1, 1889, to Apr. 15, 1890	45.00		Schooner <i>Grampus</i> .
Collins, D. E.	Field agent	July 1 to 31, 1889	115.00		Division of fisheries.
Collins, J. W.	Assistant in charge	July 1 to Aug. 31, 1889	200.00		Do.
Do.	do	Sept. 1, 1889, to June 30, 1890	225.00		Do.
Collins, Lillian M.	Clerk	July 1, 1889, to June 30, 1890	50.00		Do.
Conley, Frank S.	Second mate	do	55.00		Schooner <i>Grampus</i> .
Conture, Alex.	Spawn-taker	Nov. 1 to 29, 1889	2.00		Alpena, Mich.
Conture, C.	Field assistant	Oct. 28 to Nov. 21, 1889	2.00		Do.
Conture, Fred	Spawn-faker	Nov. 15 to 25, 1889	2.00		Do.
Conture, James	do	Nov. 13 to 29, 1889	2.00		Do.
Conway, A.	Seaman	May 16 to June 30, 1890	45.00		Schooner <i>Grampus</i> .
Conway, N. F.	Spawn-taker	Apr. 29 to 30, 1890	40.00		Havre de Grace, Md.
Do.	do	May 1 to 22, 1890	45.00		Do.
Corey, R. M.	do	Oct. 28 to Nov. 16, 1889	2.00		Michigan stations.
Cork, Lucy	Picking eggs	Jan. 1 to 16, 1890	.75		Northville, Mich.
Corliss, Clifford G.	Clerk and assistant	Oct. 10, 1889, to May 15, 1890	50.00		Gloucester, Mass.
Corridon, J. J.	Clerk and stenographer	July 1, 1889, to Feb. 23, 1890	100.00		Office of chief clerk and reports of <i>Grampus</i> .
Corti, Lui	Laborer	July, Aug., and Dec., 1889	2.15		Duluth, Minn.
Do	do	Aug. 24 to Nov. 9, 1889	2.00		Do.
Corvin, James L.	do	Nov. 8, 1889, to June 30, 1890	30.00		Wytheville, Va.
Cotton, H. R.	Laborer	Sept. 1 to 31, 1889; Apr. 25, to May 31, 1890.	1.25		Maine stations.
Do	do	Oct. 1 to Dec. 10, 1889	1.25		Construction, Maine stations.
Craig, M. R.	Distribution messenger	May 15 to June 30, 1890	45.00		Car No. 1.
Crampton, John	Laborer	Nov. 1 to 11, 1889, to Jan. 3, 1890	1.50		Fish-ponds, Washington, D. C.
Crampton, Walter	do	Sept. 9 to 11, Nov. 1 to 11, 1889; May 24 to June 30, 1890.	1.50		Do.
Crossman, Alfred E.	do	Sept. 30 to Oct. 4, 1889	1.25		Maine stations.
Crisple, D. A.	Carpenter	Sept. 12 to Oct. 5, 1889	3.50		Construction, Leadville, Colo.
Cummins, David	Laborer	Nov. 4 to 25, 1889	12.1		Construction, Neosho, Mo.
Curtin, Thomas	Watchman	July 1, 1889, to June 30, 1890	55.00		Fish ponds, Washington, D. C.
Dana, Richard	Fish-culturist	July 1, 1889, to Apr. 14, 1890	75.00		Wood's Holl, Mass.
Do	In charge hatchery	April 15 to June 30, 1890	75.00		Central station.
Dandridge, William	Cook	Apr. 4 to May 31, 1890	40.00		Fort Washington, Md.
Dary, A.	Collecting fishes	Nov. 1 to 21, 1889	1.50		Mississippi Basin.
Davis, A. B.	Spawn-taker	Apr. 8 to May 31, 1890	60.00		Fort Washington, Md.
Davis, Bradley M.	Assistant	July 16 to Aug. 31, 1889	25.00		Inquiry, interior waters.
Do	do	Sept. 16 and 11, 1889	.20		Do.
Davis, Jerome	Laborer	Sept. 9 to 30, 1889	1.35		Maine stations.
Davis, J. T.	do	Mich. 3 and 4, 1890	1.25		Neosho, Mo.
Davis, M.	do	May 27 to 29, 1890	3.25		And assistant, Fort Washington, Md.
Day, Emory	Spawn-taker	Apr. 21 to May 22, 1890	55.00		Havre de Grace, Md.
Day, James D.	do	do	55.00		Do.
Dean, H. D.	Foreman	Nov. 1, 1889, to June 30, 1890	75.00		Northville, Mich.
Dean, May J.	Picking mosses	Jan. 11 to 18, 1890	.75		Do.
Deane, Thornton	Laborer	Apr. 4 to 30, 1890	35.00		Central Station.
Do	do	May 1 to 31, 1890	45.00		Do.
Decker, B. E.	Collecting fishes	Aug. 3 to 14, 1889	1.50		Mississippi basin.
Demert, B. E.	Distribution messenger	Dec. 18, 1889, to Jan. 15, 1890	45.00		Car No. 1.
Denton, S. F.	Draughtsman	Nov. 20, 1889, to June 30, 1890	125.00		Office of Commissioner.
Derusha, William	Spawn-taker	Nov. 8 to 20, 1889	2.00		Michigan stations.
427.50					
115.00					
400.00					
2,250.00					
600.00					
660.00					
58.00					
50.00					
22.00					
34.00					
68.23					
2.67					
31.10					
40.00					
10.50					
359.67					
782.14					
98.03					
130.00					
233.00					
52.50					
39.66					
69.68					
17.25					
65.62					
3.75					
63.00					
2.50					
660.00					
710.00					
190.00					
76.00					
10.50					
106.00					
37.50					
1.80					
27.00					
2.50					
8.13					
57.27					
57.27					
600.00					
4.88					
31.50					
45.00					
5.25					
42.10					
920.83					
26.00					

FISCAL YEAR 1889-'90—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Derwine, John	Collecting fishes	Oct. 2 to 12, 1889.	\$1.50	Per day	\$7.50	Mississippi Basin.
Dewey, William	Spawn-taker	Nov. 7 to 18, 1889.	2.00	do	24.00	Michigan stations.
Dick, Indian	Laborer	July 2 to Nov. 18, 1889; May 16 to 22, 1890.	1.00	do	71.25	Baird, Cal.
Dickerson, William	do	July 1, 1889, to June 30, 1890.	55.00	Per month	660.00	Fish-ponds, Washington, D. C.
Dickey, W. W.	do	July 26 to Oct. 1, 1889.	2.50	Per day	78.75	Construction, Leadville, Colo.
Dimick, F. F.	Agent	July 1, 1889, to June 30, 1890.	25.00	Per month	300.00	Statistical inquiry.
Dimick, William C.	Carpenter	Sept. 12 to Oct. 5, 1889.	3.50	Per day	15.62	Construction, Leadville, Colo.
Dobson, W. H.	Distribution messenger	May 1 to 28, 1890.	55.00	Per month	49.68	Havre de Grace, Md.
Dodge, E. J.	Spawn-taker	Nov. 5 to 17, 1889.	2.00	Per day	24.00	Sandusky, Ohio.
Doller, V.	do	Nov. 2 to 24, 1889.	2.00	do	44.00	Do.
Donnelly, F. L.	Record clerk	July 1, 1889, to June 30, 1890.	100.00	Per month	1,200.00	Office of distribution.
Dorr, Arthur E.	Laborer	Aug. 7 to Dec. 10, 1889.	1.25	Per day	52.81	Construction, Maine stations.
Dorr, Roscoe E.	do	Mar. 12 to Apr. 30, 1890.	1.25	do	43.24	Do.
Dorr, William	do	Oct. 24 and 25, 1889.	1.00	do	2.00	Do.
Dorman, A.	Collecting fishes	Aug. 30 to Sept. 5, 1889.	1.50	do	4.05	Mississippi Basin.
Douglass, Henry	Station superintendent	July 1, 1889, to June 30, 1890.	100.00	Per month	1,200.00	Sandusky, Ohio.
Drew, Frank M.	Assistant	July 16 to Aug. 31, 1889.	25.00	do	37.50	Inquiry, interior waters.
Dubé, Peter.	Fireman	Oct. 8, 1889, to Feb. 10, 1890.	50.00	do	205.67	Duluth, Minn.
Duffy, F.	Collecting fishes	Oct. 28 to Nov. 1, 1889.	1.50	Per day	3.75	Mississippi Basin.
Duffy, J. M.	do	July 30 to Aug. 2, 1889.	1.50	do	4.87	Do.
Duffy, L.	do	Nov. 25 to 29, 1889.	1.50	do	1.50	Do.
Dunbar, A. H.	Laborer	Oct. 1, 1889, to April 28, 1890.	1.25	do	115.41	Construction, Maine station.
Dunbar, Henry E.	do	Mar. 5 to 22, 1890.	1.25	do	21.25	Do.
Duncan, Isaac	do	Nov. 4 to 25, 1889.	.35	Per hour	7.00	Do.
Dunnington, W. A.	In charge of car	July 1, 1889, to June 30, 1890.	100.00	Per month	1,200.00	Car No. 2.
Duval, E.	Spawn-taker	Nov. 8 to 16, 1889.	2.00	Per day	18.00	Michigan stations.
Eastman, Isaac	Laborer	Oct. 1 to Dec. 31, 1889; May, 1890.	1.25	do	61.25	Construction, Maine stations.
Edwards, Vinal N.	Assistant and pilot	July 1, 1889, to June 30, 1890.	60.00	Per month	720.00	Wood's Holl, Mass.
Eldridge, Herbert.	Laborer	Oct. 15, to Nov. 27, 1889.	1.25	Per day	21.81	Construction, Maine stations.
Do.	do	Oct. 25 to 31, 1889.	1.25	do	15.00	Maine stations.
Ellis, Ebenezer	Acting librarian	June 11 to 30, 1890.	125.00	Per month	83.33	Office of Librarian.
Ellis, J. F.	In charge of car	July 1, 1889, to June 30, 1890.	100.00	do	1,200.00	Car No. 3.
Elsenore, U. H.	Laborer	Oct. 24 to Nov. 23, 1889.	1.75	Per day	40.26	Maine stations.
Ericson, Freeman	Distribution messenger	Apr. 23 to May 26, 1890.	60.00	Per month	66.32	Inquiry interior waters.
Evermann, B. W.	Special assistant	July 16 to Aug. 31, 1889.	25.00	do	37.50	Maine stations.
Facteau, Rufus P.	Laborer	Feb. 6 to May 31, 1890.	2.00	Per day	116.40	Do
Do.	do	Aug. 10 to 14, 1889.	2.00	do	8.00	Clackamas, Oregon.
Fallert, B.	Watchman	July, Aug., Oct., 1889; Dec. 1, 1889, to Apr. 30, 1890.	62.25	Per month	498.00	Do
Do.	Laborer	Sept. and Nov., 1889.	61.50	do	123.00	Clackamas, Oregon.
Do.	Night fisherman	Oct. 1889.	40.00	do	40.00	Do

Fassett, H. C.	Clerk	July 1, 1889, to June 30, 1890	69.00	do	828.00	Steamer <i>Albatross</i> .
Faunce, Chas. C.	Spawn-taker	Apr. 12 to May 11, 1890	55.00	do	54.35	Fort Washington, Md.
Fennell, F. P.	Clerk and typewriter	July 1, 1889, to June 30, 1890	100.00	do	1,200.00	Office chief clerk.
Ferguson, Thos	Egg collector	Nov. 16 to 25, 1889	2.00	Per day	20.00	Alpena, Mich.
Fesler, B.	Special assistant	July, 1889	50.00	Per month	50.00	Investigation, interior waters.
Do.	do	Aug. 1 to 31, 1889	25.00	do	25.00	Investigation, interior waters; scientific inquiry.
Filkins, Grace	Egg-picker	Nov. 14, 1889, to Jan. 28, 1890	.75	Per day	33.70	Northville, Mich.
Fitzgerald, Edward	Laborer	Apr. 16 to May 21, 1890	60.00	Per month	70.65	Washington, D. C.
Floyd, J.	Messenger	Aug. 30, Sept. and Oct., 1889	1.50	Per day	2.55	Collecting and distributing fish.
Do.	Fish collector	Sept. 2 to 4, 1889	1.50	do	2.25	Collecting indigenous fish.
Forbes, Thos	Laborer	Aug. 15 to 31, 1889	1.50	do	21.00	Carp ponds, Washington, D. C.
Foster, G. J.	Carpenter	Oct. 15 to 26, 1889	2.00	do	22.00	Neosho, Mo.
Foster, T. W.	do	Aug. 9 to Oct. 23, 1889	3.33½	do	199.99	Clackamas, Oregon.
Do.	Watchman	Oct. 24 to Dec., 1889	62.25	Per month	78.41	Do.
Do.	do	Nov., 1889	61.50	do	61.50	Salmon station, Cushing, Oregon.
Fox, J. C.	Assistant	Oct. 15, 1889, to Feb. 28, 1890	50.00	do	227.41	Alpena, Mich.
Fox, Peter	Egg-collector	Nov. 1 to 26, 1889	2.00	Per day	50.00	Sandusky, Ohio.
Do.	do	Apr. 11 to 16, 1890	2.00	do	10.00	Do.
Do.	do	Nov. 1 to 27, 1889	2.00	do	52.00	Do.
Frazier, Bradley	Laborer	Feb. 15 to 28, 1890	1.25	do	9.75	Maine stations.
French, W. W.	do	Aug. 5 to 17, 1889	2.00	do	16.00	Do.
Do.	do	Nov. 6 to 30, 1889	2.00	do	35.55	Do.
Do.	do	Dec. 2 to 14, 1889	2.00	do	19.90	Do.
Gallager, M.	do	Oct. 28, 30, 31, and Nov. 1, 1889	1.50	do	3.75	Collecting indigenous fishes.
Gay, John	Inspector	July 1, 1889, to June 30, 1890	125.00	Per month	1,500.00	Inspector of stations.
Gibbs, Charles E.	Laborer	do	1.40	Per day	492.80	Maine stations.
Gifford, Bradley L.	Painter	Sept. 28; Oct. 12 to Nov. 16, 1889	2.50	do	52.50	Wood's Holl, Mass.
Gifford, T. L.	Foreman painter	Sept. 16 to Oct. 22, 1889	4.00	do	88.00	Do.
Gilbert, Charles H.	Naturalist	July 1 to Sept. 15, 1889	175.00	Per month	437.50	Steamer <i>Albatross</i> .
Do.	Temporary assistant	April 27 to June 30, 1890	175.00	do	373.33	Do.
Gilbert, George	Egg-collector	April 11 to 25, 1890	1.50	Per day	21.00	Sandusky, Ohio.
Gill, Miss C. E.	Clerk	Nov. 1, 1889, to June 30, 1890	50.00	Per month	400.00	Office of accounts.
Gill, H. A.	Disbursing agent	July 1, 1889, to June 30, 1890	200.00	do	2,400.00	Do.
Gill, Israel C.	Pilot	Oct. 11 and 12, 1889	3.00	Per day	6.00	Schooner <i>Grampus</i> .
Girvin, S.	Egg-collector	Sept. 25 to Oct. 11, and Oct. 25 to Nov. 21, 1889	2.00	Per day	90.00	Northville, Mich.
Gleason, M.	Assistant messenger	July 1, 1889, to May 2, 1890; June 9 to 30, 1890	60.00	Per month	647.87	Division of distribution, cars 1, 2, and 3.
Do.	do	May 3 to June 8, 1890	60.00	do	72.13	Shad production, Delaware River.
Goffin, William	Attendant	July 1, 1889, to June 30, 1890	20.00	do	240.00	Wood's Holl station.
Goldsmith, Z. H.	Foreman	do	70.00	do	840.00	Carp ponds, Washington, D. C.
Gorham, C. E.	Engineer and draughtsman	do	6.00	Per day	1,767.00	Engineer's office.
Gorman, Peter	Laborer	April 21 to 30, 1890	1.50	do	15.00	Cold Spring Harbor.
Graves, T. W.	Painter	Jan. 27 and Feb. 1, 1890	.15	Per hour	4.27	Neosho, Mo.
Gray, Rufus E.	Laborer	Dec. 2 to 7, 1889	1.25	Per day	7.50	Maine stations.
Do.	do	Nov. 6-30, 1889; April 10 to May 31, 1890	1.25	do	82.22	Do.
Green, Reuben	do	July 1 to 25, 1889	50.00	Per month	40.32	Baird Station, Cal.
Do.	do	Sept. 1 to Nov. 23, 1889	3.00	Per day	203.50	Do.
Greenleaf, Lervy	do	Oct. 1 to Nov. 6, 1889	2.00	do	38.00	Collecting indigenous fish.
Grindle, Clarence	General assistant	Jan. 1 to June 30, 1890	45.00	Per month	270.00	Maine stations.

FISCAL YEAR 1889-'90—Continued

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Grismond, B. L.	Laborer.	Jan. 27 to Feb. 11, 1890	\$1.50	Per day	\$21.00	Carp ponds, Washington, D. C.
Groh, S.	Egg-collector	Oct. 31 to Nov. 23, 1889	2.00	do	48.00	Mill Point, Mich.
Do.	Assistant	Nov. 25 to Dec. 9, 1889	1.50	do	22.50	Alpena, Mich.
Grojean, Frank J.	Painter	Nov. 4 to 9, 1889	.25	Per hour	7.25	Neosho, Mo.
Do.	do	Nov. 11 to 16, 1889	.25	do	9.31	Do.
Do.	do	Nov. 25 to 30, 1889	.25	do	4.00	Do.
Do.	do	Dec. 6 and 7, 1889	.25	do	5.00	Do.
Do.	do	Jan. 20 to 25, 1890	.20	do	6.80	Do.
Do.	do	Jan. 27 to Feb. 1, 1890	.20	do	7.80	Do.
Do.	do	Feb. 3 to 8, 1890	.20	do	8.20	Do.
Do.	do	Feb. 10 to 15, 1890	.20	do	9.60	Do.
Do.	do	Feb. 17 to 19, 1890	.20	do	5.35	Do.
Gurley, Revere R.	Assistant	Mar. 11 to June 10, 1890	100.00	Per month	301.07	Steamer <i>Fish Hawk</i> .
Do.	Assistant laboratory	June 11 to 30, 1890	100.00	do	66.67	Division scientific inquiry.
Hagan, F. P.	Assistant messenger	July 1, 1889, to June 30, 1890	60.00	do	720.00	Car No. 1.
Hahn, Edward E.	First mate	July 1, 1889, to June 30, 1890	75.00	do	900.00	Schooner <i>Grampus</i> .
Haker, Mary	Egg-picker	Dec. 28, 1889, to Jan. 28, 1890	.75	Per day	19.50	Northville, Mich.
Hall, Albert	Cook	Oct. 1, 1889, to May 15, 1890	45.00	Per month	336.77	Gloucester station.
Hall, Ansley	Field agent	July, 1889, to Dec. 15, 1889	45.00	do	246.77	Statistical inquiry.
Do.	do	Dec. 16, 1889, to June 30, 1890	75.00	do	448.71	Do.
Hall, John	Carpenter	Dec. 2 to 19, 1889	1.00	Per day	16.00	Fort Gaston station.
Do.	Laborer	Feb. 20 to 21, 1890	1.00	do	1.50	Do.
Halloway, James	Cook	Apr. 2 to May 31, 1890	39.00	Per month	76.70	Battery station, Md.
Hamilton, James	Night engineer	Nov. 4, 1889, to Jan. 31, 1890	45.00	do	130.50	Northville, Mich.
Hancock, J. A.	Watchman	May 17 to 31, 1890	30.00	do	14.52	Wytheville station, Va.
Hancock, William K.	Assistant	July 1 to Nov. 6, 1889	40.00	do	168.00	Do.
Do.	do	Nov. 7, 1889, to Apr. 6, 1890	60.00	do	300.00	Central station, Washington, D. C.
Do.	do	Apr. 7 to May 20, 1890	60.00	do	86.71	Fort Washington, Md.
Do.	do	May 21 to June 30, 1890	75.00	do	101.61	Leadville, Colo.
Hare, S. J.	Skilled laborer	July 1, 1889, to June 30, 1890	60.00	do	720.00	Car No. 1.
Harris, Edward	Cook	Dec. 2, 1889, to Apr. 28, 1890	45.00	do	220.55	Maine stations,
Harriman, Edwin	Laborer	Aug. 30 to Sept. 30, 1889	1.50	Per day	57.35	Do.
Do.	do	Sept. 1 to Dec. 10, 1889	1.25	do	5.25	Collecting indigenous fishes.
Harrington, Dennis	do	Sept. 9 to Oct. 5, 1889	1.50	do	29.60	Do.
Harrington, C.	do	Sept. 9 to Nov. 29, 1889	1.50	do	4.50	Do.
Harrington, C. M.	do	Oct. 29, 30, 31, and Nov. 2, 1889	1.50	do	298.06	Carp ponds, Washington, D. C.
Harron, L. G.	Night watchman	July 3, to Dec. 15, 1889	55.00	Per month	210.97	Car No. 2.
Do.	Assistant messenger	Dec. 16, 1889, to Mar. 31, 1890	60.00	do	120.00	Fort Washington, Md.
Do.	Captain of seine	April 1 to May 31, 1890	60.00	do	60.00	Aquarias, central station.
Do.	Laborer	June 1 to 30, 1890	60.00	do	136.13	Baird station, Cal.
Haskell, George H.	Carpenter	Oct. 5, to Nov. 30, 1889	3.50	Per day	1.50	Collecting indigenous fishes.
Hayes, D. B.	Laborer	Nov. 25, 27, 29, 1889	1.50	do		

Names, Edward.	Stenographer.	July 1, 1889, to June 30, 1890.	150.00	Per month.	1,800.00	Office of Commissioner.
Healey, Charles E.	Coxswain of launch.	Sept. 24 to 30, 1889.	39.00	do.	9.10	Battery station, Md.
Heaton, Ed.	Laborer.	Aug. 1 to Nov. 16, 1889.	2.00	Per day.	168.00	Collecting indigenous fishes.
Do.	do.	Nov. 18 to 30, 1889.	1.50	do.	24.00	Do.
Hellman, Henry C.	do.	July 22 to Nov. 30, 1889.	1.50	do.	30.72	Do.
Henderson, J. E.	Egg collector.	Nov. 2 to 5, 1889.	2.00	do.	8.00	Northville, Mich.
Hendry, Ida A.	Egg picker.	Nov. 21, 1889, to Jan. 28, 1890.	.75	do.	28.51	Do.
Hennessey, Daniel.	Laborer.	Nov. 23 to 29, 1889.	1.75	do.	8.75	Wood's Holl, Mass.
Herr, A. S.	Night watchman.	Apr. 26 to May 12, 1890.	45.00	Per month.	24.92	Central station.
Hesling, William.	Foreman.	July 22 to Aug. 2, 1889.	2.00	Per day.	14.00	Collecting indigenous fishes.
Hessel, R.	Superintendent.	July 1, 1889, to June 30, 1890.	150.00	Per month.	1,800.00	Carp ponds, Washington, D. C.
Hickley, John C.	Laborer.	Oct. 1889.	1.25	Per day.	1.25	Maine stations.
Higgins, L.	do.	Sept. 2 to Nov. 22, 1889.	1.50	do.	87.00	Do.
Hill, Jessie.	do.	Oct. 1, 2, 3, and 5, 1889.	1.50	do.	3.00	Collecting indigenous fishes.
Hill, F.	Messenger.	May 1 to June 11, 1890.	8.00	Per month.	10.93	Neosho, Mo.
Hill, John.	Laborer.	Apr. 21 to 24, 1890.	1.50	Per day.	4.50	Carp ponds, Washington, D. C.
Hill, M. J.	Fireman.	Apr. 21 to 30, 1890.	45.00	Per month.	15.00	Battery station, Md.
Do.	do.	May 1 to 22, 1890.	45.00	do.	31.90	Do.
Hill, Reuben.	Painter.	Sept. 17 to Oct. 22, 1889.	2.50	Per day.	57.50	Wood's Holl, Mass.
Hill, William J.	Collector.	Nov. 1 to 25, 1889.	2.00	do.	50.00	Alpena, Mich.
Hillman, G. H.	Laborer.	Aug. 21 to 30, 1889.	1.50	do.	6.75	Collecting and distributing indigenous fishes.
Do.	do.	Oct. 2 to 10, 1889.	1.50	do.	4.50	Do.
Hilton, Scott R.	Fireman.	Apr. 3 to May 10, 1890.	1.50	do.	57.00	Gloucester station, Mass.
Hinchman, Frank.	Laborer.	Mar. 8, 1890.	1.00	Per day.	13.56	Northville, Mich.
Hines, W.	do.	May 3 to 6, 1890.	2.00	do.	3.00	Fort Washington, Md.
Hinger, J. H.	Egg-collector.	Nov. 4 to 25, 1889.	2.00	do.	42.00	Sandusky, Ohio.
Do.	do.	Apr. 8 to 27, 1890.	2.00	do.	38.00	Do.
Hinrichs, H. Stanley.	Clerk.	July 1, 1889, to June 30, 1890.	60.00	Per month.	720.00	Division scientific inquiry.
Hodge, C. F.	Special assistant.	July 1 to 31, 1889.	2.50	Per day.	77.50	Wood's Holl, Mass.
Do.	do.	Aug. 1 to Sept. 30, 1889.	2.50	do.	152.50	Steamer Fish Hawk.
Hogne, Harry.	Laborer.	Apr. 28 to May 3, 1890.	1.25	do.	4.50	Neosho, Mo.
Holoway, James H.	Cook.	June 1 to 18, 1890.	39.00	Per month.	23.40	Battery station, Md.
Holt, S. B.	Laborer.	Oct. to Dec. 3, 1889.	1.25	Per day.	36.25	Maine stations.
Holt, V. J.	do.	Oct. to Dec., 1889.	1.25	do.	37.50	Do.
Holtzman, C. L.	Assistant.	Jan. 2 to 4, 1890.	.20	Per hour.	3.00	Bloomington, Ind.
Handyshell, Z.	Laborer.	July 22 to Oct. 17, 1889.	1.50	Per day.	48.09	Collecting indigenous fishes.
Hooper, A. A.	Assistant.	Apr. 1 to 3, 1890.	1.00	do.	3.00	Gloucester station, Mass.
Hoppler, George.	Laborer.	Sept. 2 to Oct. 20, 1889.	1.50	do.	27.70	Collecting indigenous fishes.
Hostler, Willie.	Assistant.	Dec. 23, 1889, to June 30, 1890.	.50	do.	94.50	Fort Gaston station.
Hotaling, L.	Head carpenter.	July 2 to Nov. 30, 1889.	3.50	do.	31.63	Baird, Cal.
Do.	do.	Feb. 1 to Apr. 16, 1890.	3.50	do.	143.50	Do.
Howlett, George.	Spawn-taker.	Apr. 23 to 30, 1890.	45.00	Per month.	12.00	Battery station, Md.
Do.	do.	May 1 to 22, 1890.	50.00	do.	35.42	Do.
Hoxie, James D.	Painter.	Sept. 17 to Oct. 22, 1889.	2.50	Per day.	56.25	Wood's Holl, Mass.
Hubbard, W. F.	Foreman.	July 1, 1889, to June 30, 1890.	125.00	Per month.	1,500.00	Clackamas, Oregon.
Hudson, C. B.	Artist.	July 1 to Sept. 30, 1889.	75.00	do.	225.00	Division of fisheries.
Do.	do.	Oct. 10 to Dec. 15, 1889.	.80	Per hour.	210.40	Do.
Hunt, C. R.	Carpenter.	Oct. 7 to Nov. 8, 1889.	3.50	Per day.	80.50	Baird station, Cal.
Hunter, James B.	Egg-collector.	Oct. 17 to Dec. 10, 1889.	2.00	do.	110.00	Northville, Mich.
Jackson, Richard.	Laborer.	July 1 to 10, 1889.	1.25	do.	10.00	Central station.
Jackson, R. I.	do.	May 7, 1890.	3.00	do.	1.50	Neosho, Mo.

FISCAL YEAR 1889-'90.—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
James, Frank C.	Apprentice messenger.	April 21 to June 30, 1890	\$45.00	Per month	\$105.00	Car No. 3,
Jim, Indian	Laborer	July 8 to 24, 1889	1.00	Per day	15.00	Baird station, Cal.
Joe, Indian	do	Sept. 13 to 19, 1889	1.00	do	5.50	Do.
Johnson, James	Janitor and messenger	July 1, 1889 to June 30, 1890	50.00	Per month	600.00	Maintenance of office.
Johnson, J. H.	Laborer	June 10 to 30, 1890	1.50	Per day	25.50	Carp ponds, Washington, D. C.
Johnson, William	do	June 10 to 30, 1890	1.50	do	25.50	Do.
Johnson, O. P.	do	Aug. 19 to Nov. 2, 1889	1.25	do	84.37	Neosho, Mo.
Johnson, R. S.	Assistant messenger	July 1, 1889, to June 30, 1890	75.00	Per month	900.00	Car No. 3.
Johnson, William	Laborer	July 1 to Aug. 17, 1889	1.25	Per day	51.25	Neosho, Mo.
Jones, Alexander	Watchman	July 1, 1889, to June 30, 1890	45.00	Per month	540.00	Battery station, Md. and Central sta-
Jones, E. B.	Carpenter	Aug. 3 to 22, 1889	3.00	Per day	48.00	General offices.
Jones, Frank.	Cook	Oct. 7 to Nov. 7, 1889	45.00	Per month	46.79	Car No. 1.
Jones, George.	Laborer	Apr. 7 to 11, 1890	1.25	Per day	5.50	Neosho, Mo.
Jones, George A.	do	July 1, 1889, to Apr. 6, 1890	55.00	Per month	470.52	Wytheville station, Va.
Do.	Assistant	Apr. 7 to May 24, 1890	60.00	do	94.45	Central station.
Do.	Laborer	May 25 to June 30, 1890	55.00	do	67.42	Wytheville station, Va.
Jones, James F.	Spawm-taker.	Apr. 21 to 27, 1890	55.00	do	12.83	Havre de Grace, Md.
Jordan, David S.	Temporary assistant.	July 16 to Aug. 31, 1889	25.00	do	37.50	Division scientific inquiry.
Joyce, Sarah.	Taking temperature observa-	July 1, 1889, to June 30, 1890	10.00	do	120.00	Fort Washington, Md.
Keenan, James.	Spawm-taker.	Apr. 21 to May 22, 1890	55.00	do	60.79	Havre de Grace, Md.
Keil, Philip	Carpenter	Nov. 4 to 15, 1889	3.00	Per day	32.25	Central station.
Keller, Thomas W.	Clerk	July 1 to Sept. 5, 1889	75.00	Per month	162.50	Do.
Do.	do	Sept. 6, 1889, to June 30, 1890	75.00	do	737.50	Library, central office.
Kendall, W. C.	Assistant division scientific in-	July 1, 1889, to June 30, 1890	60.00	do	720.00	Do.
Kenly, D. W.	quary.	July 1 to Nov. 4, 1889	75.00	do	310.00	Central station.
Do.	Fish-culturist	Nov. 5 to 30, 1889	75.00	do	65.00	Gloucester, Mass.
Do.	do	Dec. 1, 1889, to Feb. 28, 1890	80.00	do	240.00	Do.
Do.	do	Mar. 1 to Apr. 9, 1890	80.00	do	104.00	Schooner <i>Grampus</i> ,
Do.	Spawm-taker.	Apr. 10 to June 30, 1890	80.00	do	216.00	Havre de Grace, Md.
Kenly, J. T. C.	Fish-culturist	Apr. 21 to May 28, 1890	50.00	do	61.83	Do.
Kensella, Pat.	Assistant in hatchery	Sept. 9 to 13, 1889; 4 days	1.50	Per day	6.00	Quincy, Ill.
Kewney, Orion	Collecting fishes	Oct. 14 to 18, 1889; 3½ days	1.50	do	5.25	Do.
Keyes, George F.	do	Sept., 1889; 6 days	1.25	do	7.50	Craigs Brook station, Mo.
Do.	Laborer	Sept. 13 to Dec. 10, 1889	1.25	do	62.75	Do.
Do.	do	June 1 to 30, 1890	1.40	do	40.60	Do.
Kline, Isaiah	Assistant in hatchery	Sept. 16 to Oct. 29, 1889	1.00	do	18.00	Wytheville, Va.
Koehler, C.	Laborer	Apr. 29 to May 12, 1890	45.00	Per month	20.42	Car No. 1.
Kolb, George.	Cook	Feb. 20 to 21; Apr. 2 and 23, 1890	1.00	Per day	3.50	Fort Gaston, Cal.
Krouse, F. M.	Laborer	Apr. 11 to May 1, 1890	45.00	Per month	31.45	Fort Washington, Md.
Labidy, George	Spawm-taker	Nov. 9 to 18, 1889	2.00	Per day	20.00	Monroe, Mich.

Ladd, W. H.	do	Nov. 8 to 16, 1889.	2.00	do	13.00	Sandusky, Ohio.
Lafountain, Henry	do	Nov. 11 to 14, 1889.	2.00	do	8.00	Monroe, Mich.
Lafountain, Peter	do	do	2.00	do	8.00	Do.
Lambson, Giles H.	Messenger, distribution	July 1, 1889, to June 30, 1890	60.00	Per month	720.00	Car No. 2.
Lavigne, Joseph	Spawn-taker	Nov. 10 to 18, 1889.	2.00	Per day	18.00	Monroe, Mich.
Landy, E.	Watchman	May 13 to 31, 1890.	60.00	Per month	36.77	Gloucester, N. J.
Larkin, Timothy	Spawn-taker	Apr. 21 to May 22, 1890	55.00	Per month	57.27	Havre de Grace, Md.
Latchford, G. W.	Carpenter	July 31 to Aug. 1, 1889	3.00	Per day	6.00	Central station.
Latimer, Clarence E.	Clerk	July 1, 1889, to Apr. 30, 1890.	91.66	Per month	916.60	Central office.
Laws, A. A.	Messenger, distribution	May 1 to 26, 1890.	45.00	do	37.74	Delaware River station.
Leonard, Joseph	Painter	Sept. 20 to Oct. 11, 1889.	2.50	Per day	35.00	Wood's Holl, Mass.
Lee, Thomas	Laborer	Sept. 9 to 21, 1889.	3.00	do	35.25	Leadville, Colo.
Lentz, J. W.	Spawn-taker	Apr. 22 to May 22, 1890.	45.00	Per month	45.40	Havre de Grace, Md.
Levine, Frank C.	Carpenter	Apr. 23, 1890.	1.00	Per day	1.00	Fort Gaston, Cal.
Lenenberger, John	Laborer	August 12 to 31, 1889.	1.75	do	31.50	Clackamas Station, Oregon.
Do.	do	Sept. 1 to 30; Nov. 1 to 30, 1889	51.50	Per month	103.00	Do.
Do.	do	Oct. 1 to 31; Dec. 1 to 31, 1889.	52.25	do	104.50	Do.
Do.	do	Jan. 1 to 31, 1890	52.25	do	52.25	Do.
Do.	do	Feb. 1 to 22, 1890	1.75	Per day	38.50	Do.
Lewis, C. C.	Messenger, distribution	July 1 to Dec. 15, 1889	75.00	Per month	411.29	Car No. 1.
Do.	do	Jan. 2 to 13, 1890	75.00	do	29.03	Do.
Do.	Assistant	Jan. 14 to June 15, 1890	90.00	do	457.26	Leadville, Colo.
Do.	do	June 16 to 30, 1890	75.00	do	37.50	Wytheville, Va.
Lewis, R. E.	do	July 1 to Oct. 31, 1889	40.00	do	160.00	Investigation of Alaska salmon fisheries.
Do.	Clerk	Nov. 1 to 30, 1889	40.00	do	40.00	Central office.
Do.	do	Dec. 1, 1889, to Apr. 6, 1890.	50.00	do	210.00	Do.
Do.	do	Apr. 7 to May 31, 1890.	65.00	do	117.00	Fort Washington, Md.
Do.	do	June 1 to 30, 1890	50.00	do	50.00	Central station.
Lewis, Thos. J.	Tidal observer	June 18 to 30, 1890	15.00	do	6.50	New London, Conn.
Libbey, jr., William	Special assistant	July 1 to Sept. 24, 1889	150.00	do	420.00	Schooner <i>Grampus</i> .
Lilja, Erik	Cabin-boy	July 1 to 31, 1889	30.00	do	30.00	Do.
Lendbeek, Lui	Laborer	July 1 to Dec. 31, 1889	1.75	Per day	266.00	Duluth, Minn.
Lincoln, Anne C.	Clerk	July 1, 1889, to June 30, 1890.	50.00	Per month	600.00	Central office.
Linn, S. E.	Watchman	May 20 to 31, 1890.	60.00	do	23.23	Gloucester station, N. J.
Linton, Edwin	Special assistant	July 3 to Sept. 4, 1889	3.00	Per day	192.00	Wood's Holl station, Mass.
Littleton, Geo. W.	Assistant	Oct. 15, 1889, to May 16, 1890	60.00	Per month	423.87	Sandusky station, Ohio.
Locke, E. F.	Watchman	July 1 to Sept. 30, 1889	60.00	do	180.00	Gloucester station, Mass.
Do.	Foreman	Oct. 1, 1889, to May 15, 1890	80.00	do	598.71	Do.
Do.	Watchman	May 16 to June 30, 1890.	60.00	do	90.97	Do.
Logan, Arthur	Cook	Nov. 8 to 24, 1889	45.00	do	25.50	Car No. 1.
Lowden, H. T.	Laborer	Nov. 12 to 23, 1889	1.50	Per day	17.25	Northville station, Mich
Lowden, Hattie	Egg-picker	Nov. 14, 1889, to June 28, 1890.	.75	do	41.25	Do.
Lowey, James	Seaman	June 14 to 30, 1890.	45.00	Per month	25.50	Schooner <i>Grampus</i> .
Lucas, E. R.	Distribution messenger	July 1, 1889, to June 30, 1890.	75.00	do	900.00	Car No. 2.
Lundblad, Niles E.	Seaman	July 1, 1889, to May 14, 1890	45.00	do	470.32	Schooner <i>Grampus</i> .
Magie, W. F.	Special assistant	July 20 to Sept. 18, 1889	125.00	do	248.39	Do.
Major, M.	Field work	Oct. 31 to Nov. 23, 1889	2.00	Per day	48.00	Alpena station, Mich.
Do.	Assistant	Apr. 18 to 30, 1890	1.50	do	19.50	Do.
Manor, C.	Spawn-taker	Nov. 11 to 14, 1889	2.00	do	8.00	Monroe, Mich.
Martin, J.	Assistant	Jan. 11 to June 30, 1890	60.00	Per month	340.65	Leadville station, Colo.
Martin, S. J.	Assistant statistical inquiry	July 1, 1889, to June 30, 1890	50.00	do	600.00	Gloucester, Mass.

FISCAL YEAR 1889-'90—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Mason, F. P.	Laborer (construction)	July 2, 1889, to May 31, 1890.	\$2.00	Per day	\$332.20	Craig's Brook station, Me.
Mather, Fred.	Assistant	July 1, 1889, to June 30, 1890.	41.66	Per month	500.00	Cold Spring Harbor, N. Y.
Maxwell, John	Station superintendent	do	100.00	do	1,200.00	Wood's Holl, Mass.
Maynard, William	Watchman (night)	do	60.00	do	720.00	Central station.
McArthur, A.	Laborer	Feb. 17 and 28, 1890	.12½	Per hour	4.25	Grand Lake Stream, Schoodic station, Me.
McCahan, J.	do	Apr. 22 to 26, 1890.	1.00	Per day	5.00	Fort Washington station, Md.
McCormick, Andrew	Fish culturist.	July 1 to Nov. 30, 1889	50.00	Per month	250.00	Duluth station, Minn.
Do.	do	Dec. 1, 1889, to Feb. 28, 1890	60.00	do	180.00	Do.
Do.	do	Mar. 1 to June 30, 1890	75.00	do	300.00	Do.
McCormick, Francis	Copyist and messenger	July 1, 1889, to June 30, 1890.	50.00	do	600.00	Division of scientific inquiry.
McCormick, Wanda	Cook	July 1, 1889, to Feb. 28, 1890	25.00	do	200.00	Duluth station, Minn.
McClure, Joshua	Laborer	Sept. 2 to Nov. 23, 1889	1.50	Per day	87.38	Schoodic station, Me.
McDonald, M.	Commissioner	July 1, 1889, to June 30, 1890.	5,000.00	Per year	5,000.00	Washington, D. C.
McFarland, Minnie	Egg-picker	Dec. 28, 1889, to Jan. 28, 1890	.75	Per day	20.00	Northville, Mich.
McKnight, O. B.	Laborer	Apr. 21 to May 3, 1890	1.25	do	13.75	Neosho station, Mo.
McKenzie, M.	do	Aug. 10 to 31, 1889	1.50	do	30.00	Clackamas station, Oregon.
Do.	do	Oct. 1 to 31, 1889	1.00	do	12.50	Do.
McKenzie, D. M.	Spawn-taker	Sept. 29 to Nov. 22, 1889	1.00	do	30.00	Northville station, Mich.
McLachlan, Daniel	Fireman	July 1, 1889, to May 31, 1890	50.00	Per month	550.00	Duluth station, Minn.
McNab, Angus, J.	do	July 1 to Sept. 15, 1889; Feb. 10 to June 30, 1890.	50.00	do	358.04	Do.
McNamee, John P.	Spawn-taker	Apr. 19 to 30, 1890	55.00	do	22.00	Havre de Grace, Md.
Do.	do	May 1 to 22, 1890	60.00	do	42.46	Do.
McNeill, Malcolm	Assistant	Aug. 20 to Sept. 7, 1889	125.00	do	77.55	Schooner <i>Grampus</i> .
Meek, S. E.	do	July 16 to Aug. 31, 1889	25.00	do	37.50	Scientific inquiry.
Merrill, C. I.	Laborer	Feb. 14 to 27, 1890	1.25	Per day	8.37	Craig's Brook station, Me.
Merrill, Eben	Gate-tender	Nov. 2 to 17, 1889	1.50	do	22.50	Do.
Merrill, Frank	Laborer	Oct. 2 to 25, 1889	1.00	do	14.50	Do.
Merrill, John	do	Oct. 17 to 31, 1889; Feb. 4 to 11, 1890.	1.25	do	17.50	Do.
Meyer, John	Spawn-taker	Nov. 10 to 14, 1889	2.00	do	8.00	Sandusky station, Ohio.
Michaelson, H. P.	Laborer (construction)	Aug. 1, 1889	2.50	do	2.50	Leadville station, Colo.
Middleton, William	Cook	May 15 to 26, 1890	45.00	Per month	17.42	Car No. 1.
Miller, Ed.	Laborer	Aug. 26 to Oct. 2, 1889	1.50	Per day	7.05	Collecting indigenous fishes.
Miller, N. B.	Assistant	July 1, 1889, to June 30, 1890	100.00	Per month	1,200.00	Steamer <i>Albatross</i> .
Miller, Oscar	Laborer	Sept. 25 to Nov. 20, 1889	1.50	Per day	40.20	Collecting indigenous fishes.
Miller, Page	Hauling ice	March 6 to 8, 1890	3.00	do	7.00	Northville station, Mich.
Minott, E. M.	Carpenter	Feb. 1 to 28, 1890	3.50	do	84.00	Bard station, Cal.
Mitchell, George	Spawn-taker	Apr. 21 to 30, 1890	35.00	Per month	11.67	Havre de Grace, Md.
Do.	do	May 1 to 22, 1890	40.00	do	28.38	Do.

Mitchell, James.	do	Apr. 21 to May 22, 1890.	55.00	do	57.27	Do.
Mitchell, N. F.	Spawn-taker	Nov. 1 to 25, 1889.	2.50	Per day	62.50	Sandusky station, Ohio.
Mitchell, S. H.	Carpenter	Nov. 16, 1889, to Mar. 31, 1890.	65.00	Per month	292.50	Wood's Holl station, Mass.
Montgomery, Benjamin.	Spawn-taker	Apr. 7 to 30, 1890.	45.00	do	36.00	Fort Washington, Md.
Moore, Daniel	Laborer	July 10, 1889, to Apr. 6, 1890, and June, 1890.	35.00	do	346.84	Central station.
Do.	Scullion	Apr. 7 to May 31, 1890.	35.00	do	63.00	Fort Washington, Md.
Moore, George H. H.	Superintendent of distribution	July 1, 1889, to June 30, 1890.	150.00	do	1,800.00	Washington, D. C.
Morehouse, J. H.	Distribution messenger	Nov. 6 to 9, 1889.	1.50	Per day	6.00	Car No. 2.
Morgan, W. H.	Watchman and laborer	July 1 to Oct. 31, 1889.	60.00	Per month	240.00	Central station.
Do.	Fish culturist	Nov. 1, 1889, to June 30, 1890.	90.00	do	720.00	Fort Gaston station, Cal.
Morris, Jesse.	Laborer	Sept. 23 to Oct. 9, 1889.	1.50	Per day	19.50	Collecting indigenous fishes
Morris, John.	do	Oct. 21 to 26, 1889.	1.50	do	5.25	Do.
Morris, Joseph.	do	Aug. 8 to Nov. 29, 1889.	1.50	do	45.80	Do.
Morrison, James.	Spawn-taker	Nov. 7 to 25, 1889.	2.00	do	36.00	Sandusky station, Ohio.
Moseley, William R.	Painter	Feb. 10 to May 3, 1890.	.20	Per hour	22.75	Neosho station, Mo.
Moulton, F. W.	Assistant in hatchery	Apr. 9 to May 11, 1890.	45.00	Per month	48.97	Fort Washington, Md.
Murphy, E. T.	Spawn-taker	Apr. 21 to 30, 1890.	50.00	do	16.67	Havre de Grace, Md.
Do.	do	May 1 to 22, 1890.	55.00	do	38.94	Do.
Murphy, I. D.	do	Apr. 21 to May 22, 1890.	55.00	do	57.27	Do.
Munson, William H.	Laborer	Sept. 1, 1889, to Feb. 28, 1890, and Apr., 1890.	55.00	do	385.00	Schoodic station, Me.
Neff, Louis.	do	July 22 to 26, 1889.	1.50	Per day	4.85	Collecting indigenous fishes.
Neill, George A.	Distribution messenger	Apr. 20 to June 30, 1890.	45.00	Per month	106.50	Car No. 3.
Nicholson, M. L.	Clerk	July 1 to Dec. 31, 1889.	75.00	do	450.00	Office of accounts.
Do.	do	Jan. 1 to June 30, 1890.	90.00	do	540.00	Do.
Nicholson, W. L.	do	July 1 to 31, 1889.	120.00	do	120.00	Do.
Nickerson, Minnie A.	Cleaning residence	Oct. 1 to 10, 1889.	1.00	Per day	10.00	Wood's Holl, Mass.
North, Fred.	Carpenter	Oct. 7, 1889, to Apr. 25, 1890.	2.00	do	219.00	Neosho station, Mo.
Norman, Lawrence.	Laborer	Sept. 9 to 11, 1889.	1.50	do	4.50	Carp ponds, Washington, D. C.
O'Brien, P.	Spawn-taker	Oct. 18 to Nov. 22, 1889.	2.00	do	72.00	Alpena station and Scott's Point, Mich.
O'Connor, J. J.	Chief clerk	July 1 to 31, 1889.	183.33	Per month	183.33	Office of Commissioner.
Do.	do	Aug. 1, 1889, to June 30, 1890.	200.00	do	2,200.00	Do.
Oliver, Joseph P.	Seaman	July 1 to Dec. 30, 1889.	45.00	do	236.16	Schooner <i>Grampus</i> .
Olsen, Tobias.	do	July 1, 1889, to June 30, 1890.	45.00	do	540.00	Do.
Osier, David.	do	July 1 to Dec. 31, 1889.	45.00	do	270.00	Do.
Pacey, W. M.	Mason	Nov. 4 to 25, 1889.	.35	Per hour	5.60	Neosho, Mo., construction.
Page, W. F.	Station superintendent	July 1, 1889, to June 30, 1890.	1,500.00	Per year	1,500.00	Do.
Palmer, Mrs. I. M.	Clerk and copyist	do	75.00	Per month	900.00	Chief clerk's office.
Parker, Albert.	Spawn-taker	Nov. 4 to 24, 1889.	2.00	Per day	40.00	Sandusky, Ohio.
Parker, George	Cabin boy	Sept. 9, 1889, to May 31, 1890.	35.00	Per month	305.66	Schooner <i>Grampus</i> .
Parker, H. P.	Clerk	July 1, 1889, to June 30, 1890.	70.00	do	840.00	Chief clerk's, inspectors, and division of fisheries.
Parker, John F.	Cabinet-maker	Aug. 2 to 16, 1889.	3.00	Per day	39.00	Repairing office furniture.
Partridge, F. W.	Laborer	August, 1889.	1.25	do	2.99	Maine stations.
Partridge, Thomas.	do	Sept. 15 to Dec. 31, 1889.	2.00	do	186.50	Do.
Do.	do	April 2, 1890.	1.50	do	1.50	Do.
Pearce, T. C.	Distribution messenger	July 1 to Sept. 30, 1889.	45.00	Per month	135.00	Car. No. 1.
Do.	do	Oct. 1, 1889, to June 30, 1890.	60.00	do	540.00	Do.
Peck, James I.	Special assistant	July 1 to Sept. 24, 1889.	2.50	Per day	215.00	Investigations, Wood's Holl.
Pennington, R. R.	Distribution messenger	Apr. 29 to June 30, 1890.	55.00	Per month	113.66	Special car.
Perkins, James	Laborer	Oct. 2 to Nov. 20, 1889.	1.35	Per day	60.74	Maine stations.
Perry, Charles	Spawn-taker	Oct. 8, 1889, to May 15, 1890.	60.00	Per month	435.58	Gloucester, Mass.

FISCAL YEAR 1889-'90—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Pinkerton, J. A.	Assistant at hatchery	July 1, 1889, to June 30, 1890	\$40.00	Per month	\$480.00	Northville, Mich.
Pitts, J. R.	Laborer	July 24 to 31, 1889	2.50	Per day	16.25	Leadville, Colo., construction.
Platts, George	Spawn-taker	Oct. 21 to Nov. 22, 1889	2.00	do	66.00	Alpena, Mich.
Poindexter, Miles	Assistant at hatchery	July 1, 1889, to Apr. 30, 1890	40.00	Per month	400.00	Wytheville, Va.
Poirier, F.	Laborer	Nov. 18 to 24, 1889	1.50	Per day	10.50	Alpena, Mich.
Poplar, John H.	Spawn-taker	Apr. 19 to 30, 1890	40.00	Per month	16.00	Harve de Grace, Md.
Do	do	May 1 to 22, 1890	45.00	do	31.90	Do.
Post, George	do	Nov. 7 to 25, 1889	2.00	Per day	38.00	Michigan stations.
Pritchard, S. LeR.	Clerk	July 1, 1889, to Jan. 31, 1890	50.00	Per month	350.00	Division of fisheries.
Do	do	Feb. 1 to June 30, 1890	65.00	do	325.00	Do.
Pritchard, Thomas	Laborer	Feb. 17 to 24, 1890	1.25	Per day	7.50	Neosho, Mo.
Propst, J. M.	Fainter	Feb. 3 to 8, 1890	.20	Per hour	8.80	Do.
Pryor, Fannie B.	Charwoman	July 8, 1889, to June 30, 1890	40.00	Per month	470.97	Central office.
Quick, Philip	Assistant in hatchery	Nov. 4 to Dec. 21, 1889; Feb. 9 to Apr. 23, 1890.	2.00	Per day	148.00	Sandusky, Ohio.
Quivers, E. W. L.	Car cook	Aug., 1889.	40.00	Per month	40.00	Car No. 2.
Radeliff, Robert	Laborer	July, Oct., Nov., 1889; Apr., 1890	3.00	Per day	87.50	Baird, Cal.
Rathbun, Richard	Assistant in charge of division	July and Aug., 1889.	200.00	Per month	400.00	Division scientific inquiry.
Do	do	Sept. 1, 1889, to June 30, 1890	225.00	do	2,250.00	Do.
Ravenel, W. de C.	Station superintendent	July 1, 1889, to June 30, 1890	125.00	do	1,500.00	Havre de Grace, Md., and special service.
Rawlett, J. W.	Laborer	do	1.50	Per day	432.12	Fish-ponds, Washington, D. C.
Raymond, Joseph	Spawn-taker	Nov. 7 to 25, 1889	2.00	do	38.00	Michigan stations.
Reed, James	Watchman	Nov. 6 to Dec. 16, 1889; Apr. 30 to May 15, 1890.	1.50	do	126.00	Alpena, Mich.
Renouf, Joe	Collector of fishes	Nov. 25, 29, 1889, equal to 1 day	1.50	do	1.50	Indigenous fishes.
Roettger, Louis	Special assistant	July 16 to Aug. 31, 1889	25.00	Per month	37.50	Inquiry interior waters.
Do	do	Sept. 5, 1889, to Feb. 8, 1890	.20	Per hour	34.50	Do.
Reynolds, M.	Assistant in hatchery	Apr. 21 to May 28, 1890	50.00	Per month	61.83	Havre de Grace, Md.
Rich, George W.	Spawn-taker	Oct. 4, 1889, to Mar. 8, 1890	45.00	do	217.74	Gloucester, Mass.
Ricker, Staley B.	Seaman	Mar. 24 to June 30, 1890	45.00	do	146.61	Schooner <i>Grampus</i> .
Riley, J. J.	Spawn-taker	Nov. 11 to 16, 1889	2.00	Per day	12.00	Alpena, Mich.
Rivers, W. R.	Laborer	Nov. 15 to 17, 1889	2.50	do	7.50	Leadville, Colo., ponds.
Robertson, W. H.	do	Oct. 1, 1889, to May 31, 1890	1.25	do	119.85	Construction, Maine stations.
Robeson, H. E.	do	Mar. 17 to 19, 1889	1.25	do	3.75	Neosho, Mo.
Robinson, E. M.	Fish culturist	July 1 to Sept. 20, 1889	100.00	Per month	266.67	Wytheville, Va.
Do	Station superintendent	Sept. 21, 1889, to June 30, 1890	125.00	do	1,166.66	Leadville, Colo.
Robinson, J.	Laborer	Aug. 29 to 31, Nov. 1 to 8, 1889	1.75	Per day	19.25	Clackamas, Oregon.
Do	Fisherman	Sept. 1889	51.50	Per month	51.50	Do.
Do	Laborer	Oct. 1889	52.25	do	52.25	Do.
Robinson, Washington	Janitor	July 1, 1889, to June 30, 1890	50.00	do	600.00	Central offices.
Rochester, H. M.	Spawn-taker	Apr. 10 to 22, 1890	45.00	do	19.50	Fort Washington, Md.

Do.	Assistant in hatchery	Apr. 23 to May 31, 1890	45.00	do	57.00	Central station.
Rockwell, Julia L.	Clerk	July 1, 1889, to June 30, 1890	70.00	do	806.13	Chief clerk's office.
Rockwood, C. G., jr	Special assistant	July 15 to Aug. 24, 1889	125.00	do	165.32	Schooner <i>Grampus</i> .
Roe, W. H.	Laborer	Aug. 5, 1889	2.00	Per day	2.00	Indigenous fishes.
Rogers, E. I.	Draughtsman	July 1, 1889, to June 30, 1890	75.00	Per month	900.00	Engineer's office.
Rogers, O. V.	Laborer	July, 1889	1.75	Per day	45.50	Cold Spring Harbor, N. Y.
Do.	do	Dec. 2 to 6, 1889; Feb. 2 to May 31, 1890.	2.00	do	248.00	Do.
Root, A. W.	Assistant	July 1, 1889, to June 30, 1890	50.00	Per month	600.00	Northville, Mich.
Root, Frank	Spawn-taker	Jan. 21 to Feb. 8, 1890	1.50	Per day	8.25	Do.
Root, M. S.	do	Nov. 1 to 20, 1889	2.50	do	50.00	Do.
Do.	Assistant	Nov. 21, 1889, to Jan. 31, 1890	50.00	Per month	116.67	Do.
Royer, J. C.	Laborer	Feb. 8 to 11, 1890	1.75	Per day	4.38	Do.
Do.	Fisherman	Sept., 1889	51.50	Per month	51.50	Clackamas, Oregon.
Do.	Laborer	Oct., 1889	52.25	do	52.25	Do.
Do.	do	Nov. 1 to 13, 1889	1.75	Per day	22.75	Do.
Sanders, R.	do	July 1, 1889, to Jan. 28, 1890	1.25	do	374.68	Neosho, Mo.
Sarah, Indian	do	Sept., Oct. 1 to 6; Nov. 18 to Dec. 17, 1889.	1.00	do	73.00	Baird, Cal.
Sargent, Edward	do	Nov. 22, 1889	1.50	do	.75	Indigenous fishes.
Saunders, D.	Stone mason	Oct. 23 to Nov. 27, 1889	2.50	do	60.01	Maine stations.
Saunders, D. P.	Cooper	Oct., 1889	1.75	do	22.31	Do.
Sauerhoff, W. R.	Machinist	July 1, 1889, to June 30, 1890	80.00	Per month	960.00	Central station and launch <i>Blue Wing</i> .
Sauerhoff, W. P.	Fish culturist	July, 1889	75.00	do	75.00	Do.
Do.	Foreman of construction	Aug. 1, 1889, to Jan. 24, 1890	125.00	do	721.77	Leadville, Colo.
Do.	Fish culturist	Jan. 25 to Feb. 28, 1890	75.00	do	91.93	Central station.
Do.	do	Mar. 1 to Apr. 23, 1890	80.00	do	221.33	Do.
Do.	do	Apr. 24 to May 31, 1890	80.00	do	98.67	Gloucester, N. J.
Do.	do	June, 1890	80.00	do	80.00	Central station.
Scheile, Robert	Fish collector	Apr. 11 to 29, 1890	2.00	Per day	36.00	Sandusky, Ohio.
Schroll, D. M.	do	Aug. 2 to Oct. 30, 1889	1.50	do	38.25	Indigenous fishes.
Schroll, Royal	do	Aug. 8 to 14, 1889	1.50	do	3.00	Do.
Scudder, Charles W.	Clerk	July 1, 1889, to June 30, 1890	100.00	Per month	1,200.00	Office chief clerk.
Seagle, George A.	Station superintendent	do	100.00	do	1,200.00	Wytheville, Va.
Seaf, W. P.	Superintendent of aquaria	do	125.00	do	1,500.00	Central station.
Shaddy, F.	Laborer	July 29 to Aug. 3, 1889	1.25	Per day	7.50	Neosho, Mo.
Shaw, Walter R.	Assistant	Dec. 10, 1889	.20	Per hour	1.40	Inquiry interior waters.
Sheffer, C. L.	Laborer	Jan. 8 to 11, 1890	1.25	Per day	5.00	Neosho, Mo.
Sheridan, D.	do	July 25 to 29, 1889	2.50	do	9.38	Leadville, Colo.
Shorter, H. B.	Cook	July 1, 1889, to Nov. 30, 1889	30.00	Per month*	195.30	Wood's Holl, Mass.
Do.	do	Dec. 1889, to June 30, 1890	45.00	do	315.00	Do.
Sifield, R.	Spawn-taker	Nov. 1 to 27, 1889	2.00	Per day	52.00	Sandusky, Ohio.
Do.	do	Apr. 11 to 15, 1890	2.00	do	8.00	Do.
Simmons, Newton	Car captain	July 1, 1889, to June 30, 1890	100.00	Per month	1,176.66	Car No. 1.
Simms, R. A.	Laborer	Jan. 11 to 30, 1890	1.00	Per day	16.50	Wytheville, Va.
Sims, Thomas	Spawn-taker	Nov. 4 and 5, 1889	2.00	do	4.00	Detroit River.
Slack, T. F.	Laborer	July 10, 1889, to Dec. 15, 1889	45.00	Per month	233.70	Fish-ponds, Washington, D. C.
Do.	Watchman	Dec. 16, 1889, to June 30, 1890	55.00	do	358.39	Do.
Sloan, S.	Watchman and painter	July 7, 1889, to Apr. 22, 1890	3.00	Per day	341.25	Baird, Cal.
Sly, A. H.	Spawn-taker	Nov. 1 to 30, 1889, Apr. 11 to 30, 1890.	2.00	do	98.00	Sandusky, Ohio.

*And 30 cents per day subsistence.

FISCAL YEAR 1889-'90—Continued.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Sly, A. H.	Distribution messenger.	May 2 to 12, 1889	\$45.00	Per month	\$15.97	Car No. 1.
Smiley, C. W.	Librarian, etc.	July 1, to Aug. 31, 1889	166.66	do	333.32	Central office.
Smith, A. W., Miss.	Clerk.	July 1 to Oct. 3, 1889	66.66	do	206.43	Office of accounts.
Smith, Hugh M.	do	July 1, 1889, to Jan. 31, 1890	100.00	do	700.00	Division of fisheries.
Do	do	Feb. 1 to June 30, 1890	115.00	do	575.00	Do.
Smith, John.	Cook	July 1 to Oct. 15, 1889	45.00	do	156.77	Wood's Holl, Mass.
Do	do	Oct. 16, 1889, to June 30, 1890	45.00	do	383.23	Car No. 3.
Smith, R. C.	Spawm taker	Nov. 13 to 23, 1889	2.00	Per day	20.00	Sandusky, Ohio.
Smith, Sidney, jr.	Seaman	Dec. 9, 1889, to June 30, 1890	45.00	Per month	303.39	Schooner <i>Grampus</i> .
Snavelly, J. D.	Laborer.	Sept. 16 to Oct. 8, 1889	1.00	Per day	16.00	Wytheville, Va.
Snavelly, Joseph.	do	Oct. 28 and 29, 1889	1.00	do	2.00	Do.
Snell, Merwin Marie.	Clerk	July 1, 1889, to Feb. 14, 1890	75.00	Per month	562.50	Division of fisheries.
Snow, S.	Laborer.	Aug. 2 to 8, 1889	1.50	Per day	3.75	Indigenous fishes.
Solvin, Andrew.	do	July 1, 1889, to June 30, 1890	45.00	Per month	540.00	Wood's Holl, Mass.
Soper, Harry S.	Messenger.	Sept. 21 to Nov. 27, 1889	20.00	do	21.66	Maine stations.
Soper, Robert T.	Laborer.	Oct. 17 to 31, Dec. 1 to 17, 1889	1.50	Per day	43.50	Do.
Spencer, Charles.	Spawm-taker	Apr. 14 to 30, 1889	55.00	Per month	31.16	Fort Washington, Md.
Spurgeon, King.	Laborer.	July, Aug., Oct., 1889	52.25	do	156.75	Clackamas, Oregon.
Do.	do	Sept., Nov., 1889	51.50	do	103.00	Do.
Do	do	Dec. 1 to 14, 1889	1.75	Per day	24.50	Do.
Stafford, W. H.	Watchman	Oct. 10 to 31, 1889	3.00	do	66.00	Maine stations.
Starr, James	Spawm-taker.	Nov. 7 to 16, 1889	2.00	do	20.00	Michigan stations.
Stevenson, Chas. H.	Field agent.	July 1, 1889, to Feb. 28, 1890	50.00	Per month	400.00	Division of fisheries.
Do.	do	Mar. 1, to June 30, 1890	75.00	do	300.00	Do.
Stewart, Frankie	Picking eggs.	Nov. 13, 1889, to Jan. 28, 1890	.75	Per day	35.63	Northville, Mich.
Stid, M. E.	Laborer.	Sept. 12 to Oct. 1, 1889	2.50	do	38.75	Ladville, Colo., station.
Stimpson, W. G.	Assistant.	Aug. 26, 1889 to Mar. 9, 1890	100.00	Per month	648.38	Steamer <i>Fish Hawk</i> .
Stocks, Bessie S.	Copyist.	July 1, 1889, to June 30, 1890	40.00	do	480.00	Engineer's office.
Stoerzer, Albert J.	Office messenger.	July 1, to Aug. 31, 1889	30.00	do	60.00	Library and stationery office.
Do.	Cerk.	Sept. 1, 1889, to June 30, 1890	50.00	do	500.00	Do.
Stone, Livingston.	Field superintendent	July 1, 1889, to Mar. 31, 1890	166.96	do	1,499.94	Pacific coast stations; also Alaska investigation.
Stone, George.	Spawm-taker.	Nov. 6 to 18, 1889	2.00	Per day	26.00	Michigan stations.
Stuart, W. E.	Temperature observer.	July 1, 1889, to June 30, 1890	15.00	Per month	180.00	Potomac river.
Summers, John A.	Laborer	Oct. 4 to Nov. 27, 1889	1.50	Per day	35.25	Indigenous fishes.
Sunshine, Indian.	do	Sept. 1 to Nov. 18, 1889	1.00	do	45.50	Baird, Cal.
Swan, A. M.	Fisherman	Sept. to Oct. 31, 1889	1.00	do	14.80	Clackamas, Oregon.
Swanson, Ben.	Laborer	July 25 and 26, 1889	2.50	do	5.00	Leadville, Colo.
Sweeney, R. O., sr.	Station superintendent	July 1 to Nov. 30, 1889	125.00	Per month	625.00	Duluth, Minn.
Do	do	Dec. 1, 1889, to June 30, 1890	150.00	do	1,050.00	Do.
Sweeny, R. O., jr.	Machinist	July 1, 1889, to Apr. 30, 1890	70.00	do	700.00	Do.
Teasley, Allen	Spawm-taker.	Nov. 15, 1889	2.00	Per day	2.00	Alpena, Mich.

Thompson, H. R.	do	Apr. 21 to 30, 1890.	40.00	Per month	13.33	Havre de Grace, Md.
Do	do	May 1 to 22, 1890.	45.00	do	31.90	Do.
Thompson, Peder	Laborer	July 15, 1889, to Dec. 14, 1889	1.75	Per day	174.07	Duluth, Minn.
Tilton, A. W.	Painter	Oct. 2 to 9, 1889.	2.50	do	15.00	Wood's Holl, Mass.
Timbers, Robert	Janitor	July 1 to Oct. 9, 1889	60.00	Per month	197.42	Do.
Do	Watchman and laborer	Oct. 10, 1889, to June 30, 1890.	60.00	do	522.58	Central station.
Tindall, John	Carpenter	Sept. 23, 1889	2.50	Per day	2.50	Alpena, Mich.
Toby, Indian	Laborer	Nov. 13 to 18, 1889.	1.00	do	4.25	Baird, Cal.
Tolbert, George H.	Foreman.	July 1, 1889, to Nov. 11, 1889	100.00	Per month	436.67	Construction, Neosho, Mo.
Do	Fish culturist and carpenter.	Nov. 12, 1889, to Feb. 28, 1890	80.00	do	290.66	Central station.
Do	Expert fish culturist.	Mar. 1 to Apr. 15, 1890.	80.00	do	120.00	Launch Blue Wing.
Do	Expert fish culturist and carpenter.	Apr. 16 to June 12, 1890	80.00	do	152.00	Havre de Grace, Md.
Do	penter.					
Do	Carpenter	June 13 to 30, 1890	80.00	do	48.00	Wood's Holl, Mass.
Townsend, Charles H.	Assistant.	July 1 to Aug. 31, 1889.	120.00	do	240.00	Steamer Albatross.
Do	do	Sept. 1, 1889, to June 30, 1890.	150.00	do	1,500.00	Do.
Trodon, P.	Fish collector.	Oct. 1 to 5, 1889	1.50	Per day	3.75	Indigenous fishes.
Tulian, E. A.	Assistant at hatchery	Sept. 15, 1889, to June 30, 1890.	50.00	Per month	476.66	Alpena, Mich.
Tulian, G. D.	Spawn-taker.	Oct. 17 to Dec. 10, 1889	2.00	Per day	110.00	Northville, Mich.
Tune, M. N.	Watchman	July 1, 1889, to June 30, 1890.	50.00	Per month	600.00	Central Station.
Turner, Frank	Distribution messenger.	Oct. 1 to Nov. 30, 1889	45.00	do	90.00	Clackamas, Oregon.
Turner, Henry	Laborer.	Aug. 15 to 31, Nov. 1 to 9, 1889.	1.75	Per day	40.25	Do.
Do	Fisherman.	Sept. 1 to 30, 1889.	51.50	Per month	51.50	Do.
Do	Laborer.	Oct. 1 to 31, 1889.	52.25	do	52.25	Michigan stations.
Valignette, Michael	Spawn-taker.	Nov. 10 to 18, 1889	2.00	Per day	18.00	Cold Spring Harbor, New York
Van Ansdall, F.	Laborer.	Apr. 19 to 30, 1890	1.50	do	18.00	Indigenous fisheries.
Vansteenberg, Charles	Collecting fishes	July 22 to Aug. 9, 1889.	2.00	do	18.00	General offices.
Veerhoff, W. H.	Picture-banger	Sept. 5, 1889	1.00	Per hour	6.00	Northville, Mich.
Vradenberg, E.	Engineer	Nov. 12, 1889, to Jan. 31, 1890.	45.00	Per month	118.50	Sandusky, Ohio.
Vroman, D. P.	Spawn-taker.	Nov. 4 to 23, 1889	2.00	Per day	36.00	Car No. 2.
Wade, W. S.	Distribution messenger.	July 1 to Dec. 20, 1889	45.00	Per month	263.71	Baird, Cal.
Walker, W. B.	Laborer.	Sept. 1 to 19, 1889.	3.00	Per day	48.75	Cold Spring Harbor, New York
Walters, C. H.	do	July 1 to 31, 1889.	2.00	do	62.00	Delaware River.
Do	do	May 9 to 31, 1890.	60.00	Per month	44.51	Fort Washington, Md.
Warrick, Al	do	Mar. 28 to 30, 1890	1.00	Per day	2.50	Baird, Cal.
Watkins, Charles	do	Sept. 1 to 19; Nov. 8 to 30, 1889.	3.00	do	98.25	Indigenous fisheries.
Webster, Will.	do	Aug. 14 to 27, 1889.	1.50	do	3.75	Do.
Wells, Robert.	Fireman	July 22 to Nov. 5, 1889.	1.50	do	51.00	Neosho, Mo.
Wes'ev, John	Laborer.	Apr. 14 to June 14, 1890	1.25	do	65.00	Havre de Grace, Md.
Wheeler, H. J.	Spawn-taker.	Apr. 21 to May 22, 1890.	45.00	Per month	46.10	Clackamas, Oregon.
Wheeler, Sol.	Watchman.	July, Aug., Oct. 1 to 23, 1889.	62.25	do	170.69	Fort Washington, Md.
Wheeler, Thomas M.	Night watchman.	Apr. 22 to May 11, 1890.	55.00	do	36.02	Northville, Mich.
Whitaker, Kittie	Egg-picker	Dec. 18, 1889, to Jan. 21, 1890	75	Per day	19.88	Gloucester, Mass.
White, H. G.	Assistant in hatchery.	Nov. 4, 1889, to May 15, 1890.	50.00	Per month	31.19	Baird, Cal.
Whitehurst, R.	Painter and laborer.	July 1, 1889, to May 14, 1890	3.00	Per day	408.50	Maine stations.
Whitmore, R. A.	Laborer.	Sept. 17 to Oct. 26, 1889	2.00	do	67.50	Michigan stations.
Whitten, George	Spawn-taker.	Nov. 15 and 16, 1889	20.00	Per month	4.00	Maine stations.
Wight, C. A.	Guarding salmon	Aug. 11 to Oct. 24, 1889	1.25	Per day	43.22	Do.
Do	do	Sept., 1889	1.65	do	37.78	Do.
Do	Laborer	Oct. 1 to 30, 1889.	1.50	do	21.00	Do.
Do	do	Jan. 23 to Feb. 5, 1890.		do		

FISCAL YEAR 1889-90.

Name.	Service.	Period of time.	Rate of pay.		Total of pay.	Remarks.
			Pay.	Time.		
Wight, C. A.	Carpenter	Nov. 22 to Dec. 13, 1889; Mar. 10 to May 31, 1890.	\$2.00	Per day	\$171.00	Construction, Craig's Brook, Me.
Wight, Daniel E.	Guarding salmon	July, 1889	20.00	Per month	20.00	Maine stations.
Do.	Laborer	Aug. 12 to 27, Dec. 1, 1889; to Mar. 31, 1890.	1.50	Per day	176.25	Do.
Do.	do	Aug. 28 to Nov. 30, 1889.	2.00	do	168.00	Do.
Wilcox, Ella C.	Egg-picker	Nov. 13, 1889, to Jan. 28, 1890.	.75	do	42.38	Northville, Mich.
Wilcox, W. A.	Assistant.	July 1, 1889, to May 10, 1890.	115.00	Per month	1,187.10	Division of fisheries.
Willard, George	Laborer	July 17 to 19, 1889.	1.75	Per day	5.25	Duluth, Minn.
Williams, George	Cook	July 1, 1889, to June 30, 1890.	45.00	Per month	540.00	Car No. 2.
Williams, George B., jr.	Station superintendent.	July 1 to Aug. 31, 1889.	212.50	do	425.00	Baird, Cal.
Do.	do	Sept. 1, 1889, to June 30, 1890.	150.00	do	1,500.00	Do.
Willie, Indian	Egg-picker	Oct. 1 to 3, 1889.	1.00	Per day	3.00	Do.
Willis, C. L.	Night watchman.	May 1 to June 30, 1890.	40.00	Per month	80.00	Northville, Mich.
Willis, H. C.	Laborer.	Apr. 28 to June 14, 1890.	1.25	Per day	67.50	Neosho, Mo.
Wilson, C.	Distribution messenger.	Oct. 28 to Nov. 20, 1889.	1.50	do	24.00	Car No. 2.
Wilson, George	Laborer	Aug. 26 to Nov. 29, 1889.	1.50	do	69.40	Indigenous fishes.
Wilson, Henry V.	Assistant.	July 1, 1889, to June 30, 1890.	100.00	Per month	1,200.00	Inquiry, Wood's Holl, Mass.
Wilson, J. Paul	Property clerk.	do	2,000.00	Per year	2,000.00	Central offices.
Winnerborg, Emil F.	Fireman.	Nov. 17 to Dec. 31, 1889.	45.00	Per month	66.00	Gloucester, Mass.
Wires, S. P.	Foreman.	July 1, 1889, to June 30, 1890.	75.00	do	900.00	Alpena, Mich.
Wise, L. E.	Engineer.	Aug. 9 to Nov. 25, 1889.	3.75	Per day	380.62	Clackamas, Oregon.
Wonsen, Charles H.	Ship's writer	July 1, 1889, to June 30, 1890.	60.00	Per month	720.00	Schooner <i>Granpus</i> .
Wood, E. M.	Laborer	Aug. 14 to 26, 1889.	1.50	Per day	3.75	Indigenous fishes.
Woods, Ed.	do	Sept. 7 to 9, 1889.	1.50	do	3.00	Do.
Woodard, G. W.	Carpenter	Sept. 10 to Oct. 5, 1889.	3.50	do	77.00	Leadville, Colo.
Woolman, A. J.	Special assistant.	Dec. 26, 1889, to Feb. 8, 1890.	.20	Per hour	9.80	Study, interior waters.
Worth, S. G.	Station superintendent	July and Aug., 1889.	125.00	Per month	250.00	Central station.
Do	do	Sept. 1, 1889, to June 30, 1890.	150.00	do	1,500.00	Do.
Yeatman, P. T.	Clerk	July 1, 1889, to June 30, 1890.	60.00	do	720.00	Do.
					168,728.03	

The WITNESS. If I may be permitted, if no questions are to be asked me in regard to these reports, I would like to give my evidence in regard to a statement that was made about Mr. Worth being drunk and confined thereby to his house during the season of 1889 at Fort Washington, Md.

The CHAIRMAN. Yes, sir; you may make your statement.

The WITNESS. It has been my custom at different times, generally once a month, or at the end of each month and at the end of the season, to go down to that station to pay off the men. I remember distinctly that at one time during the season of 1889 I went down there to pay off the men and I found Mr. Worth sick in bed. I did not see him at first. Usually when I go down he is at the boat to meet me. He was sick in bed, and I went to the office there and paid off the men. On the completion of my duties Mrs. Worth very kindly gave me dinner, and after dinner I went up to see Mr. Worth, whom I found sick in bed. He informed me then that he had been out on the river a few nights before and had gotten wet and caught cold. To me he looked like a man who was going to have chills and fever, but his appearance was entirely foreign to any idea that he had been drinking. He conversed with me and I could not detect in any way that such a thing was possible.

By the CHAIRMAN:

Q. Was that immediately after a trip to the city at night with fish?—A. I think it was; yes, sir. He told me he had come up here late at night, and I think he said a storm came up and it rained, and he told me that he had gotten wet, and I think it affected his bowels very much, and he was confined to his bed, how long I do not know. I say I was only down there a short while and during that time I conversed with him and his appearance was entirely foreign in every way to that of a man who had either been drinking or was under the influence of liquor.

By Senator SQUIRE:

Q. In looking over these tables I find here is the total amount of pay, I see, to S. P. Bartlett, agent in charge of the Mississippi basin, \$1,800. I suppose that means for the entire year. Then here the rate of pay is \$1.50.—A. That is an error of the copyist. It should be \$150 a month. Most of these are very carefully revised.

Q. Here is another one the same way—Charles G. Aikens, superintendent of stations, total amount \$1,800 a year, at a rate of a dollar and a half per month.—A. That is just like the other. It should be \$150 a month.

By the CHAIRMAN:

Q. Since you were before the committee the last time, have you thought of anything within your knowledge which would have a bearing upon the general scope of this inquiry upon which you can testify?—A. To tell the truth, Mr. Chairman, I have been so busy looking after this other work that I have not had any opportunity to give it much thought.

Q. Do you remember a Mr. Harris who was employed two or three years ago for a short time at the Fort Washington station?

The WITNESS. Z. V. Harris?

The CHAIRMAN. Yes, sir.

A. He was employed during this last year, 1889.

Q. For a short time?—A. For a short time only.

Q. During the season of the shad work?—A. Yes, sir; on the Potomac River at Fort Washington.

Q. Did you ever have an opportunity of observing his habits?—A. No, sir; I have not. I have only seen him perhaps three times in all.

Q. He was not employed this year?—A. No, sir.

Q. Do you know any reason why he was not employed this year?—A. I do not know the reason why he was not employed this year. I suppose he did not apply for work. With those men at Fort Washington it is not permanent employment, they are employés for the time. We have had some men for years who have come on for these short periods; but they are not positions that men who by reason of their ability and general character could obtain permanent positions as a rule would take. The pay is so small.

Q. And they are not very eagerly sought after?—A. No, sir; they are not very eagerly sought after.

Q. Do you know of any diversion of the funds of the Fish Commission being made from any special appropriation to other uses than those to which the money was appropriated?—A. No, sir; I do not.

Q. Is Mr. Walter, of New York, who did some work upon the yacht, a particular friend of yours?—A. No, sir; I have only met him a few times. I met him down at Wood's Holl. I was introduced to him by Mr. Reeves, who was then a naval engineer attached to the Commission.

At 12 o'clock m. the committee adjourned until to-morrow at 12 o'clock m.

WASHINGTON, D. C., *July 17, 1890.*

The subcommittee met at 12 o'clock m., pursuant to adjournment.
Present: Senator Stockbridge (chairman).

TESTIMONY OF HENRY C. FORD.

HENRY C. FORD, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What is your name?—A. Henry C. Ford.

Q. Where do you reside?—A. Logan Square, Philadelphia.

Q. Have you any connection at present with fish cultural work either official or otherwise?—A. I am the president of the Pennsylvania Fish Commission. I am likewise treasurer of the American Fisheries Society.

Q. Are you a member of any prominent associations which are actively interested in such matters?—A. I am treasurer of the American Fisheries Society and likewise chairman of the executive committee of the Pennsylvania Protective Fisheries Association, which is composed of a great many of the leading citizens of Philadelphia who are interested in such work.

Q. What general measures has Pennsylvania taken in regard to fish cultural matters?—A. I can answer that by saying that we have three hatcheries in the State, two for carp and one for pike-perch, and then we have a carp hatchery for distribution among the farmers. We also have had laws passed in reference to fish protection throughout the State.

Q. Has there been any co-operation in these matters between the Pennsylvania State Commission and the United States Fish Commission?—A. Yes, sir. I think our present efficiency is owing very largely to the assistance of the United States Fish Commission. In our Erie hatchery, where we hatch white fish for the Great Lakes, we have re-

quested the eggs from the United States Fish Commission, and we have likewise sent men to assist in collecting them, and they have collected them, and after impregnating the eggs sent them to our hatchery at Erie.

In regard to the Delaware River, they have furnished us the shad fry, hatched the shad fry, and we have taken them to the headwaters

Q. And distributed them?—A. Yes, sir.

Q. And that saved expense to the United States Fish Commission?—

A. Yes, sir; at our own expense.

I should like to make a few remarks in reference to that after you get through with your questions.

Q. Are you personally acquainted with the shad fisheries of the Delaware River?—A. I am probably better acquainted with that, being in my own State and in my own particular district, than with any other work.

Q. Is it in a flourishing condition?—A. It is in a very flourishing condition now. The catch of shad last year was the largest for thirty years past. The catch of shad in the Delaware River had gradually fallen away, and about five years ago the U. S. Fish Commission sent the *Fish-hawk* into the river to commence to hatch the young fry. That was before Colonel McDonald was Commissioner. The fry were then dumped overboard into the tide water, and, in my judgment, they might just as well have been dropped on this floor.

I am very fond of fishing. I am pretty brown now. I have just come from the mountains. I am acquainted with shad, and I understand about it, and so I suggested that the shad fry should be sent to the headwaters of the Delaware River. I told Colonel McDonald that I thought he would find very gratifying results from that course of conduct. For the last four years they have been handed to us. We furnished the cars and transportation and cans, and everything of that sort at the expense of the Commission. They have been run over to Jersey City, and from there along the line of the New York, Lake Erie and Western road where it strikes the Delaware and put into the river at different places.

Q. Do you notice results from that already? A. Yes, sir. The shad run up there to spawn in April, May, and June and the young fish do not go down to sea from the latter part of July to the 1st of October. The shad became very poor in the Delaware River and a number of fisheries were abandoned and a great many other fishermen thought of abandoning more. This was the first return of two years, and there was quite a marked increase, but this year the increase has been enormous, and, as I said, the largest number of shad have been caught in the Delaware this year for thirty years. The estimated value last year was \$350,000. This year \$800,000.

Q. Do you attribute that to the change of policy?—A. Yes, sir. The fishermen hardly knew what to do with their fish. Seventy-five thousand were brought into Philadelphia in one day, and in traveling through the West some time ago I saw a sign of "Shad from the Delaware," in Cleveland, Cincinnati, and Chicago, and the price of shad has been very materially cheaper.

Q. Do you consider that the natural conditions of the river are such as to warrant the belief that the shad might exist as abundantly there as in former times if their numbers were increased by artificial means?—

A. I do, very decidedly. The Delaware is a boundary stream between the States of New York, New Jersey, and Pennsylvania, in the upper

headwaters. Every other interior river is obstructed. They are all dammed, the Potomac by the slackwater navigation by the Chesapeake and Ohio Canal; the Susquehanna has been dammed up by canal navigation, but the Delaware is a boundary stream. By a treaty of 1783 between the States of Pennsylvania and New Jersey no law could be passed in one State affecting the river unless concurred in by legislative action in the other, and it has been kept free. Tide-water ends at Trenton, and for 200 miles above tide-water shad are caught to day.

Q. So that the conditions of the Delaware are particularly favorable?—A. More so than any other river on the coast.

Q. Do you consider that the United States Fish Commission was justified in taking measures to restock that river with shad?—A. Yes, sir, decidedly; not only for Pennsylvania but for the general public outside of Pennsylvania.

Q. How long has it been engaged in such work?—A. They have been stocking the river, I think, for about five years. The original way of stocking was to dump the fish over into tide-water, and they were not sent up to the headwaters of the river.

Q. Do you consider that the *Fish Hawk* was adequate to the needs of the river?—A. I do not think the *Fish Hawk* was adequate to the needs of the river as a hatchery would have been. The *Fish Hawk* was likely to have been ordered away on other service, and there was no assurance that if we had a deposit one year that we would have the next.

Q. Do you know anything about the recent establishment of a shore station in the Delaware River?—A. I requested Colonel McDonald for our Pennsylvania Fish Commission to establish a permanent hatchery on the Delaware River. We were prepared to offer him a place in Pennsylvania, that is, at the expense of the Government. We would try to make what terms we could. I had the city of Chester in my mind. I thought that Gloucester was a much better place as being more in the center of the shad fisheries, and a place where they could get the spawn more readily.

Q. Gloucester, N. J.?—A. Yes, sir. And then again our New Jersey and Pennsylvania commissions are very desirous to work together, and I felt, for that reason, more like conceding the point to them.

Q. Do you think that good judgment was used in selecting the site?—A. I think very good judgment. Colonel Gay came to ask my views on the subject, and he and I went to Gloucester and selected the site there.

Q. Can you state why this locality was selected in preference to any other?—A. On account of its accessibility, in order to obtain the spawn of the fish, and on account of its good railway communication. Then, again, it was a good point from which to distribute fish.

Q. Would any other locality have offered better advantages in any other way?—A. I do not know. We should have liked to have had it in Pennsylvania, but we waived the point on account of the superior facilities over there.

Q. Do you know that any special inducements were offered for the establishment of the station at its present place?—A. I do. When I went with Colonel Gay to Gloucester I saw Mr. Thompson, who is the proprietor of a very large fishery at Gloucester, and he told Mr. Gay that if the fishery were established there by the United States Commission that he would give them the building; that he would build the building without any expense to the Government.

Q. And give the ground?—A. Yes, sir; and I thought it was such a liberal offer and so much more liberal than we were prepared to make that I advised him to accept it.

Q. Was title to the property given to the Commission or only the use of the property?—A. I think the use of the property for a series of years.

Q. What would have been the cost to the Government for the building of a station at the place entirely at its expense?—A. Mr. Thompson said that the contract price for the building was about \$1,800. I suppose the cost would have been about the same to the Government.

Q. Do you think that the United States Fish Commission is open to criticism on account of having accepted this offer of Mr. W. J. Thompson and the accommodations he has furnished?—A. I can not say that they are open to any criticism. I think they made a very good bargain.

Q. It has been stated by some witnesses before the committee that the Gloucester station was an objectionable station on account of its proximity to some hotel and beer garden, and so on.—A. Gloucester is a place of great resort that way for a good many people from Philadelphia, who go down there for their plank-shad dinner and drink their beer, and so on, but the hatchery I do not think is troubled by any parties of that kind. It is rather remote from that. It is just a little back from the river, and the general course of the people is along the beach. I do not think that would be an objection.

Q. Please give us your general impression as to the suitability of the station for the purposes for which it was intended. Do you think the location is a good one?—A. Yes, sir. There is a very large shad hatchery there and a net over a mile long makes a haul twice a day. There is a shad fishery about a mile and a half or a mile below there and almost every mile or so down the river for 10 miles. They have no trouble about getting the fish spawn. That is a very great thing.

Q. Has the United States Commission received any aid from the Pennsylvania commission in respect to the shad work at that station or to any of its propagating work?—A. I have said that we distributed the fish.

Q. That saved the United States Fish Commission the expense of distribution?—A. Yes, sir.

Q. Can you form any idea as to how much expense is saved to the United States Fish Commission by the distribution by the Pennsylvania commission?—A. Well I can not give the exact figures. They would vary every year—probably eight hundred or a thousand dollars.

Q. Are you acquainted with John Gay, of the United States Fish Commission?—A. I am.

Q. How long have you known him?—A. About eight or nine years.

Q. Was he ever connected with fish cultural work in Pennsylvania?—A. He was president of the fish commission before I became the chairman of the commission.

Q. Did he show particular aptitude for fish cultural work, and did he attain prominence in the same?—A. He was the first fish commissioner to bring the Pennsylvania commission out of the slough. The fish commissioners formerly did not pay much attention to the subject. It was merely a complimentary appointment by the governor, and not to men who had knowledge of the subject—not much at any rate. They would meet sometimes and have a good dinner, but paid no particular attention to fish propagation. Colonel Gay did differently. He built new hatcheries. The Erie hatchery was built by him. The hatchery at Allentown was built by him. The hatchery at Corry was built by him.

Q. Do you consider that his experiences in such matters have been sufficient to justify Colonel McDonald in appointing him to his present

position?—A. I do not think he could have had a better man, or one better versed in fish cultural methods than Colonel Gay.

Q. In his conduct of fish cultural work in Pennsylvania did he exhibit, in your judgment, a proper combination of practical skill and theoretical knowledge such as is required in the management and supervision of such an enterprise?—A. He did; very decidedly.

Q. Have you any knowledge that fish hatcheries or other buildings required for the Pennsylvania commission were constructed under his supervision or official control?—A. The Erie hatchery, the Corry and the Allentown hatcheries were constructed under his supervision.

Q. Were they successfully operated; that is, do they fully serve the purpose for which they were built?—A. Yes, sir. In fact, we have made a larger output than the New York commission this year. We have made a larger output from four hatcheries than New York has from twelve.

Q. How long has Mr. Gay been connected with fish cultural work?—A. I should think about eight years; perhaps longer.

Q. Are you familiar with the equipment of the fish hatchery at Erie, Pa.?—A. I am.

Q. What type of hatching jars are used in it?—A. The McDonald hatching jar.

Q. What are the merits of the McDonald jars as compared with the Chase jar or other devices of this kind?—A. I think it is a superior jar for the hatching of whitefish. At a meeting of the American Fisheries Society at Put-in-Bay, the 15th of last May, the different methods were collated and brought before the society. We find out what the percentage of loss in hatching is, and we also learn a great deal there in regard to fish culture that we can adopt and use in hatcheries. The fish commission of Wisconsin was giving an account of hatching pike perch in the Chase jar, and they stated that they lost 50 per cent. I, very fortunately, had received from Mr. Buller, superintendent of the Corry hatchery, who, by the way, we had loaned to the United States Fish Commission to hatch out pike perch the preceding winter at the Sandusky hatchery. We sent him out there. Colonel Gay made a request for him to go there. He is thoroughly versed in that work. Well, he stated that in the McDonald jar the percentage of loss was from 5 to 10 per cent. only, and we exemplified that in hatching fifteen millions of pike perch in the Erie hatchery this last spring, and our loss was only 8 per cent. I had his letter, and I showed it to the commission. They could hardly believe it at first; that it was impossible. They did not think the percentage could be so small.

Q. What was the percentage of whitefish hatched at this hatchery last season?—A. I think from about 95 to 97 per cent. We hatched about fifteen million all together.

Q. At the Erie hatchery?—A. Yes, sir.

Q. Was this considered a successful result?—A. Very successful.

Q. Which is the most economical hatching-jar used in your work at Erie, having in consideration the price of the jar and the expense of operating it?—A. I think the McDonald jar is, very decidedly. It does not use so much water, and we have to pay for the water. We have to pay the water company for water, and it makes a very material difference.

Q. Have you hatched any pike-perch at the Erie hatchery?—A. Yes, sir; we hatched fifteen million this spring. Those we put mostly into Lake Erie, but we brought some East with which to stock our larger rivers.

Q. What success did you meet with?—A. Very great success, about 95 per cent. The eggs are glutinous and will not hatch so well. There is a feature in the McDonald jar. It forces the water faster——

Q. Have you any knowledge of the business methods and the management of the Fish Commission at this Washington station?—A. I have often been on here, and seen the operation of it, and I have thought that it has been conducted in a very energetic and capable manner; in fact, I have kept myself posted in regard to the work of the United States Fish Commission throughout the country, and I have seen a very great expansion in it since Colonel McDonald has been Commissioner.

Q. He pursues the same general policy as Professor Baird did, but has put it upon a more systematic basis and enlarged it?—A. The difference between Professor Baird and Colonel McDonald is this: Baird was more of a scientific man. He liked more scientific results. The finding of a new fish, or a shell or fossil was more to him than the practical work of hatching and distributing fish. Of course he was a very able man. McDonald, I think, is more practical.

Q. You speak of Colonel McDonald as a more practical man than Professor Baird. Now is he sufficiently accomplished in scientific work so that that branch of the service would not suffer under his administration?—A. I think so, very decidedly. I do not think there is a fish found in the United States but what he can give you the Latin designation of it and the number of bones in it and the fins.

Q. So that in your judgment he combines both those qualities?—A. Yes, sir.

Q. I will ask you in a general way whether you consider the work of the United States Fish Commission, working as it does in connection with the State commissions, as a very important work?—A. I think it is a very important thing. Now the State commissions, as a general thing, do not receive very large appropriations from their legislatures, and the aid that the United States Fish Commission can extend to them in the way of giving them eggs is a very important work.

Q. Do the various State commissions work in harmony with the United States Commission?—A. I have yet to hear the first inharmonious expression from the president of any State fish commission in regard to the matter. In the American Fishery Society, of which I am treasurer, and of which Mr. Blackford of New York is president, there was a universal expression of condemnation on the attempt to change the autonomy of this department, among all the commissioners, without exception, without regard to politics or anything of the kind. Our commission is Republican. We have one Democrat on the commission. The importance of the work is such that we rather ignore anything of that kind. The work of providing food fishes for the masses of the people and of increasing their number is of such importance that while of course we would like to have it of our own political complexion, still politics are not considered.

Q. Colonel McDonald is a Democrat?—A. I believe he is.

Q. Have you any information or knowledge of his being apparently influenced in the administration of his duties in any way by his political views?—A. Now, I can tell you one instance. I asked him in regard to that. I saw expressions in the papers and so on, and I said to him: "If it is not impertinent for me to ask it, I would like to know the political complexion of your employés here in Washington." He said, "Certainly, I shall be very happy to answer." He went over the list, and he had to call in a great many to ask them what their politics was; but about three-fourths were Republicans.

Q. And he did not know himself?—A. He did not know himself what the politics of a great many of them was. That satisfied me that the charges were groundless.

Q. How much does the Pennsylvania fish commission receive in appropriations?—A. Thirty-five thousand dollars last year. Part of that was for an additional hatchery. We will require \$50,000 next year.

Q. What was the price of shad in Philadelphia last year?—A. Two years ago from sixteen to eighteen dollars a hundred.

Q. How much was it this year?—A. From six to eight dollars a hundred. Now the people get the benefit of that.

Q. How many white fish did you plant in Lake Erie?—A. Fifteen million.

Q. This last year?—A. Last year. Colonel Gay first started that.

Q. Has that reduced the price of fish?—A. About one-third.

Q. How many brook trout did you hatch and distribute in your State?—A. Two million five hundred thousand this year, that is to say nothing about lake trout and other varieties of trout.

Q. Do you remember the number of shad?—A. I think this last year we put about four millions of shad fry in the upper waters of the Delaware, which we received from the United States Commission.

At 12.30 o'clock p. m. the subcommittee adjourned until to-morrow at 10 o'clock a. m.

WASHINGTON, D. C., *July 18, 1890.*

The subcommittee met at 10 o'clock a. m.

Present, Senator Stockbridge (chairman).

TESTIMONY OF MARSHALL McDONALD.

MARSHALL McDONALD, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What are your relations to the United States Fish Commission?—

A. I am Commissioner of Fish and Fisheries.

Q. When were you appointed?—A. I was appointed January 23, 1888.

The CHAIRMAN. I have a list of questions here presented to the committee by Mr. Frank Blaisdell. They are quite voluminous, and I will furnish you a copy of these questions, and will give you such time as you may desire in which to prepare your answers in writing to the questions.

The WITNESS. Yes, sir.

The CHAIRMAN. And you will please indicate to the chairman of the committee when you have them prepared and are ready to respond, and we will hold a session for that purpose.

The WITNESS. Yes, sir. Meanwhile I am prepared to go on with the investigation outside of these questions, that is, to take up in their systematic way the questions of appointments, expenditures, and so on.

The CHAIRMAN. Have you those prepared in writing?

The WITNESS. Yes, sir.

The CHAIRMAN. If you will submit them, giving a heading for each statement, we will receive them now.

The WITNESS. I respectfully submit for the information of the Committee of Investigation the following lists and tabulations relating

to changes in the personnel and increases in the number of personnel during the administration of the present Commissioner :

A. List of salaried employes of the U. S. Fish Commission on January 1, 1888, as reported under Senate Mis. Doc. No. 88, Fiftieth Congress, giving their names, positions, and annual compensation.

B. List of salaried employes of the U. S. Fish Commission, as shown by the pay-rolls of May, 1890, giving (a) names, (b) date of first employment, (c) compensation at that time, (d) position occupied at that time, (e) present position, (f) present compensation.

C. List of persons in the regular service of the Fish Commission on January 1, 1888, but who are not now in its service, giving (a) names, (b) position, (c) annual compensation, (d) explanatory column of remarks.

D. Table showing "The Organization and Personnel of the Permanent Force of the U. S. Commission, as constituted January 1, 1888."

E. Organization and personnel of the U. S. Commission of Fisheries as now constituted June 1, 1890. The entire personnel is grouped under the four divisions under which the work of the Commission falls, and for convenience of comparison those persons who were on the regular rolls of the Commission January 1, 1888, are indicated by a (*); those who were in the regular service of the Commission, but not continuously employed, and therefore classed as temporary employes, are indicated by a (†); those without designation of any kind are original appointments of the present Commissioner.

F. List of appointments made by the present Commissioner of Fisheries during his incumbency of office, giving names, positions, salaries, and reasons for appointments.

G. Classification and comparison of expenditures on account of salaries of permanent employes, as shown by the pay-roll of January 1, 1888, and June 1, 1890.

H. Number of permanent employes in the service of the Commission January 1, 1888, and June 1, 1890, arranged under the respective divisions of the work.

A.—List of salaried employes of the United States Fish Commission, January 1, 1888, as reported under Senate Miscellaneous Document No. 88, Fiftieth Congress.

	Name.	Position.	Annual compensation.
1	J. H. Kidder	Assistant Commissioner	\$3,000
2	M. McDonald	Chief, division of distribution	2,800
3	Herbert A. Gill	Disbursing agent	2,200
4	Charles W. Smiley	Chief, division of records	2,000
5	J. Paul Wilson	Chief, division of property	2,000
6	C. E. Gorham	Civil engineer and draughtsman	1,800
7	Edward Hayes	Stenographer to Commissioner	1,800
8	J. J. O'Connor	Clerk, division of distribution	1,800
9	Anthony C. Addison	Clerk, office of accounts	1,320
10	J. J. Corridon	Clerk, office of Commissioner	1,200
11	Charles W. Scudder	Clerk, division of records	1,080
12	H. P. Jerrell	do	1,000
13	Miss J. L. Rockwell	do	840
14	E. S. Tennent	Clerk, division of property	828
15	Edward C. Bryan	Clerk to Commissioner	780
16	E. I. Rogers	Draughtsman	900
17	L. D. Terrell	Clerk, division of distribution	720
18	Clarence E. Latimer	Clerk, division of records	840
19	Miss A. W. Smith	Clerk, office of accounts	660
20	F. P. Fennell	Clerk, division of distribution	600
21	Miss Anne C. Lincoln	Clerk, division of property	600
22	S. J. Hare	Janitor of office	720
23	Washington Robinson	do	720
24	George E. Butler	Messenger, office of accounts	540
25	M. N. Tune	Janitor of office	540
26	William H. Brittain	Messenger	300

A.—List of salaried employes of the United States Fish Commission, etc.—Continued.

	Name.	Position.	Annual compensation.
27	Albert J. Stoerzer	Messenger	\$300
28	Charles B. Jarvis	do	240
29	Mrs. A. L. Stimpson	Janitrix	240
30	Wm. M. Kemball	Messenger	180
31	Chas. G. Atkins	Superintendent Maine and Wood's Holl stations	2,400
32	Wm. O. Buck	Foreman, Maine stations	900
33	John Maxwell	Machinist, Wood's Holl station	1,200
34	John Jansen	Carpenter, Wood's Holl, Mass., station	900
35	Patrick Barry	Laborer, Wood's Holl, Mass., station	480
36	Anders Solvin	do	480
37	Fred Mather	Fish-culturist, Cold Spring Harbor, N. Y.	500
38	W. de C. Ravenel	Superintendent Havre de Grace, Md., station	1,500
39	Geo. J. Griffith	Cook, Havre de Grace, Md., station	480
40	James A. Peters	do	480
41	S. G. Worth	Fish-culturist	1,500
42	Alexander Jones	do	540
43	Geo. A. Seagle	Superintendent Wytheville, Va., station	900
44	R. Edward Earll	Assistant in charge statistical inquiry	2,200
45	W. A. Wilcox	Clerk, Washington, D. C.	1,500
46	Hugh M. Smith	do	960
47	George H. Tolbert	Fish-culturist	900
48	D. W. Kenly	do	840
49	Richard Dana	Assistant hatchery, Gloucester, Mass.	720
50	H. B. Shorter	Cook, Gloucester, Mass.	540
51	J. F. Ellis	Captain of car	1,200
52	George H. H. Moore	do	1,200
53	Newton Simmons	do	1,200
54	Richard Rathbun	Assistant, Washington, D. C.	2,200
55	T. H. Bean	Ichthyologist, Washington, D. C.	2,100
56	Leslie A. Lee	Assistant, <i>Albatross</i>	1,800
57	A. E. Verrill	Assistant, New Haven, Conn.	1,500
58	Thomas Lee	Assistant and naturalist, <i>Albatross</i>	1,440
59	Peter Parker	Assistant, Washington, D. C.	900
60	Charles H. Townsend	Assistant, <i>Albatross</i>	1,200
61	V. N. Edwards	Collector, Wood's Holl, Mass.	720
62	H. H. Stromberger	Clerk, <i>Albatross</i>	720
63	Dennis M. Cole	Preparator, <i>Albatross</i>	600
64	Miss K. J. Bush	Clerk, New Haven, Conn., station	540
65	Miss C. E. Bush	do	480
66	Thomas Watkins	Janitor and messenger, Washington, D. C.	480
67	Sarah Joyce	Recorder river temperature, Fort Washington, Md.	60
68	Geo. A. Jones	Laborer, Wytheville, Va., station	600
69	W. K. Hancock	Messenger, Wytheville, Va., station	240
70	Wm. P. Seal	In charge aquaria, central station, Washington, D. C.	1,500
71	Wm. F. Page	Superintendent of hatchery, central station	1,200
72	J. E. Brown	General assistant, central station	1,200
73	W. R. Sauerhoff	Machinist, central station	960
74	W. H. Morgan	Laborer, central station	600
75	Wm. Maynard	Watchman, central station	540
76	Robert Timbers	Laborer, central station	540
77	Rudolph Hessel	Superintendent carp ponds, central station	1,800
78	Z. H. Goldsmith	Foreman carp ponds, central station	840
79	Thomas Curtin	Watchman and laborer, central station	660
80	W. L. Conway	do	540
81	Richard Lynch	Watchman, ponds, central station	180
82	Frank N. Clark	Superintendent, Michigan stations	2,200
83	Seymour Bower	Assistant superintendent, Michigan stations	1,500
84	M. S. Root	Foreman, Northville, Mich., station	900
85	S. P. Wires	Foreman, Alpena, Mich., station	900
86	H. D. Dean	Assistant, Northville, Mich., station	600
87	Frank S. Harmon	Clerk, Northville, Mich., station	600
88	E. A. Tulian	Assistant, Alpena, Mich., station	240
89	Livingston Stone	Superintendent, Pacific coast stations	2,000
90	Loren W. Green	Assistant superintendent, Pacific coast stations	1,440
91	Reuben G. Green	Laborer, Pacific coast stations	660
92	Robert Radcliff	do	360
93	E. M. Robinson	Fish-culturist	960
94	William P. Sauerhoff	do	960
95	C. B. Hudson	Draughtsman	600
96	Miss M. L. Nicholson	Clerk, office of accounts	600
97	H. P. Parker	Clerk, division of records	660
98	Merwin M. Snell	Clerk, Washington, D. C.	720
99	W. H. Abbott	do	600
100	H. R. Center	do	600
101	S. J. Martin	Watchman and collector, Gloucester, Mass.	600
102	J. W. Collins	Captain schooner <i>Grampus</i>	2,000
103	D. E. Collins	First mate schooner <i>Grampus</i>	1,380
104	Edward E. Hahn	Second mate schooner <i>Grampus</i>	900
105	A. B. Alexander	Ship's writer schooner <i>Grampus</i>	720

B.—List of regular or permanent employes, U. S. Fish Commission, as shown by the pay-rolls of May 31, 1890.

	Name.	Date of first employment.	Compensation.	Position.	Present position.	Present compensation.
1	Vinal N. Edwards.....	May 15, 1872	p. m. \$50.00	Pilot, Wood's Holl, Mass.....	Pilot, Wood's Holl, Mass.....	p. m. \$60.00
2	Charles G. Atkins.....	July 1, 1872	p. m. 50.00	Assistant in fish-culture, Maine.....	Superintendent Maine stations.....	p. m. 150.00
3	Livingston Stone.....	Aug. 1, 1872	p. m. 250.00	Assistant.....	On leave without pay.....	
4	Fred. Mather.....	June 22, 1874	p. d. 4.00	Fish-culturist.....	Superintendent station, Cold Spring Harbor, N. Y.....	p. m. 41.66½
5	F. N. Clark.....	June 23, 1874	p. d. 3.60	do.....	Superintendent Michigan stations.....	p. m. 183.33½
6	W. F. Hubbard.....	July 1, 1874	p. m. 40.00	do.....	Acting superintendent station, Clackamas, Oregon.....	p. m. 125.00
7	T. H. Bean.....	Jan. 1, 1875	p. m. 40.00	Assistant in fishery inquiry.....	Ichthyologist.....	p. m. 200.00
8	Rudolph Hessel.....	May 19, 1875	p. m. 125.00	Fish-culturist.....	Fish-culturist.....	p. m. 150.00
9	Herbert A. Gill.....	May 1, 1876	p. m. 50.00	Clerk.....	Disbursing agent.....	p. m. 200.00
10	J. Paul Wilson.....	June 1, 1876	p. m. 100.00	Clerk.....	Property clerk.....	p. m. 166.66½
11	J. Frank Ellis.....	May 18, 1877	p. d. 2.00	Fish messenger.....	Car captain.....	p. m. 100.00
12	H. H. Buck.....	Oct. 1, 1877	p. d. 2.15	Assistant Maine hatchery.....	Superintendent construction, Maine.....	p. m. 100.00
13	W. R. Sauerhoff.....	Jan. 1, 1878	p. m. 65.00	Machinist.....	Machinist.....	p. m. 80.00
14	W. P. Sauerhoff.....	Feb. 5, 1878	p. m. 45.00	Spawn-taker and carpenter.....	Fish-culturist.....	p. m. 80.00
15	S. G. Worth.....	Apr. 12, 1878	p. m. 45.00	Spawn-taker.....	Superintendent Central station.....	p. m. 150.00
16	Michael Gleason.....	May 8, 1878	p. d. 1.23	Fireman.....	Fish-culturist.....	p. m. 60.00
17	Z. H. Goldsmith.....	May 11, 1878	p. d. 1.61	Watchman.....	Foreman.....	p. m. 70.00
18	S. J. Martin.....	July 13, 1878	p. m. 50.00	Watchman, Gloucester, Mass.....	Assistant, Gloucester, Mass.....	p. m. 50.00
19	Richard Rathbun.....	July 16, 1878	p. m. 65.00	Naturalist.....	Assistant in charge scientific inquiry.....	p. m. 225.00
20	Newton Simmons.....	May 18, 1879	p. d. 2.00	Fish messenger.....	Car captain.....	p. m. 100.00
21	F. L. Donnelly.....	May 24, 1880	p. d. 1.50	do.....	Clerk.....	p. m. 100.00
22	George H. H. Moore.....	May 25, 1880	p. d. 1.50	Spawn-taker.....	Superintendent of distribution.....	p. m. 150.00
23	J. W. Collins.....	June 1, 1880	p. m. 75.00	Assistant.....	Assistant in charge division of fisheries.....	p. m. 225.00
24	George B. Williams, jr.....	June 10, 1880	p. m. 80.00	Assistant at Baird hatchery.....	Superintendent Baird hatchery.....	p. m. 150.00
25	A. W. Root.....	Aug. 19, 1880	p. d. 2.00	Spawn-taker.....	Fish-culturist, Michigan.....	p. m. 60.00
26	S. P. Wires.....	Oct. 31, 1880	p. d. 2.00	do.....	Foreman Alpena station.....	p. m. 75.00
27	M. McDonald.....	Dec. 1, 1880	p. d. 3.00	Assistant.....	Commissioner.....	
28	J. J. O'Connor.....	Dec. 1, 1880	p. m. 60.00	Clerk.....	Chief clerk.....	p. m. 200.00
29	Robert Timbers.....	Mar. 23, 1881	p. m. 25.00	Cook.....	Laborer.....	p. m. 60.00
30	George H. Tolbert.....	Apr. 13, 1881	p. m. 25.00	Spawn-taker.....	Fish-culturist.....	p. m. 80.00
31	W. F. Page.....	Apr. 12, 1881	p. m. 45.00	Fish-culturist.....	Superintendent Neosho station.....	p. m. 125.00
32	George A. Jones.....	Apr. 13, 1881	p. m. 25.00	Spawn-taker.....	Assistant in hatchery.....	p. m. 55.00
33	Washington Robinson.....	Nov. 1, 1881	p. m. 30.00	Office janitor.....	Office janitor.....	p. m. 50.00
34	R. S. Johnson.....	Dec. 2, 1881	p. m. 20.00	Clerk.....	Car messenger.....	p. m. 75.00
35	Miss Julia L. Rockwell.....	Feb. 1, 1882	p. m. 50.00	do.....	Clerk.....	p. m. 70.00
36	J. E. Brown.....	Mar. 1, 1882	p. m. 60.00	Keeper of stores.....	Keeper of stores and clerk.....	p. m. 100.00
37	William Dickerson.....	June 1, 1882	p. d. 1.25	Laborer.....	Laborer.....	p. m. 55.00
38	W. H. Brittain.....	Jan. 21, 1882	p. w. 1.75	Mail messenger.....	Clerk.....	p. m. 45.00
39	Edward Hayes.....	Aug. 1, 1882	p. m. 150.00	Stenographer.....	Stenographer.....	p. m. 150.00
40	George A. Seagle.....	Sept. 1, 1882	p. m. 25.00	Assistant in hatchery.....	Superintendent of station.....	p. m. 100.00
41	C. S. Grindle.....	Oct. 24, 1882	p. d. 1.41½	Laborer.....	Assistant in hatchery.....	p. m. 45.00

B.—List of regular or permanent employes, U. S. Fish Commission, as shown by the pay-rolls of May 31, 1890—Continued.

Name.	Date of first employment.	Compensation.	Position.	Present position.	Present compensation.
42 George E. Butler	Nov. 12, 1882	p. m. \$25.00	Office janitor	Office janitor	p. m. \$50.00
43 Charles W. Scudder	Dec. 1, 1882	p. m. 70.00	Clerk	Clerk	p. m. 100.00
44 C. W. Smiley*	Apr. 1, 1882	p. m. 150.00	Record clerk	In charge library and stationery	
45 Thomas Curtin	Feb. 24, 1883	p. d. 1.25	Watchman	Watchman	p. m. 55.00
46 D. W. Kenly	Mar. 1, 1883	p. m. 45.00	Spawn-taker	Fish-culturist	p. m. 80.00
47 Charles H. Townsend	Mar. 13, 1883	p. m. 60.00	Assistant	Naturalist	p. m. 150.00
48 W. A. Dunnington	Apr. 21, 1883	p. d. 1.00	Messenger apprentice	Car captain	p. m. 100.00
49 John Smith	Apr. 11, 1883	p. m. 30.00	Cook	Car cook	p. m. 45.00
50 W. K. Hancock	July 1, 1883	p. m. 20.00	Laborer	Fish-culturist	p. m. 60.00
51 W. H. Morgan	Aug. 1, 1883	p. d. 1.50	Watchman	do	p. m. 90.00
52 E. A. Tulian	Oct. 20, 1883	p. d. 2.00	Spawn-taker	Assistant in hatchery	p. m. 50.00
53 A. C. Addison	Jan. 5, 1884	p. m. 50.00	Clerk	Clerk	p. m. 125.00
54 H. D. Dean	Feb. 17, 1884	p. d. 1.50	Night watchman	Assistant in hatchery	p. m. 75.00
55 H. P. Parker	Mar. 12, 1884	p. m. 25.00	Clerk	Clerk	p. m. 70.00
56 M. N. Tune	May 4, 1884	p. d. 1.00	Messenger apprentice	Watchman	p. m. 50.00
57 C. E. Gorham	July 1, 1884	p. m. 150.00	Engineer and draughtsman	Engineer and draughtsman	p. d. 6.00
58 W. de C. Ravenel	Feb. 1, 1884	p. m. 75.00	Superintendent of station	Superintendent of station	p. m. 125.00
59 Miss A. C. Lincoln	Dec. 16, 1884	p. m. 50.00	Clerk	Clerk	p. m. 50.00
60 W. A. Wilcox	Jan. 1, 1885	p. m. 50.00	Collector of statistics	Collector of statistics	p. m. 115.00
61 A. J. Stoerzer	Feb. 13, 1885	p. m. 20.00	Office messenger	Clerk	p. m. 50.00
62 L. G. Harron	Apr. 16, 1885	p. m. 55.00	Seine captain	Seine captain	p. m. 60.00
63 E. M. Robinson	Apr. 22, 1885	p. m. 55.00	Spawn-taker	Superintendent of station	p. m. 125.00
64 William Maynard	Apr. 25, 1885	p. m. 50.00	do	Night watchman	p. m. 60.00
65 Daniel Moore	May 13, 1885	p. m. 25.00	Scullion	Laborer	p. m. 35.00
66 Mrs. Sarah Joyce	June 20, 1885	p. m. 5.00	Observer of temperature	Observer of temperature	p. m. 10.00
67 S. J. Hare	July 1, 1885	p. m. 50.00	Night janitor	Skilled laborer	p. m. 60.00
68 Patrick Barry	July 17, 1885	p. d. 1.75	Laborer	Laborer	p. m. 45.00
69 Richard Dana	Oct. 19, 1885	p. m. 45.00	Messenger apprentice	Fish-culturist	p. m. 75.00
70 P. T. Yeatman	Nov. 10, 1885	p. d. 2.00	Clerk	Clerk	p. m. 75.00
71 F. P. Fennell	Jan. 1, 1886	p. m. 50.00	Clerk	Clerk	p. m. 100.00
72 H. M. Smith	do	p. m. 50.00	do	do	p. m. 115.00
73 E. I. Rogers	Mar. 20, 1886	p. m. 45.00	Messenger apprentice	Draughtsman	p. m. 75.00
74 H. B. Shorter	Mar. 29, 1886	p. m. 40.00	Cook	Cook	p. m. 45.00
75 E. R. Lucas	May 3, 1886	p. m. 45.00	Messenger apprentice	Messenger	p. m. 75.00
76 A. B. Alexander	May 25, 1886	p. m. 45.00	Seaman	Fishery expert	p. m. 100.00
77 J. H. Johnson	July 1, 1886	p. m. 62.50	Office janitor	Office janitor	p. m. 50.00
78 C. E. Bryan	July 7, 1886	p. m. 36.00	Clerk	Clerk	p. m. 100.00
79 W. P. Seal	July 28, 1886	p. m. 150.00	Special assistant, Wood's Holl, Mass	In charge aquaria	p. m. 125.00
80 John Maxwell	Sept. 1, 1886	p. m. 100.00	Machinist	Superintendent of station	p. m. 100.00
81 C. C. Lewis	Nov. 1, 1886	p. m. 45.00	Messenger apprentice	Assistant in hatchery	p. m. 90.00
82 W. H. Abbott	Nov. 24, 1886	p. m. 50.00	Clerk	Clerk	p. m. 75.00
83 R. E. Lewis	May 20, 1887	p. m. 45.00	Messenger apprentice	do	p. m. 50.00
84 Anders Solvin	June 16, 1887	p. m. 40.00	Laborer	Laborer	p. m. 45.00
85 Edward E. Hahn	Sept. 17, 1887	p. m. 75.00	Second mate	Second mate	p. m. 75.00

86	Miss L. M. Collins	Oct. 1, 1887	p. m.	40.00	Clerk	Clerk	p. m.	50.00
87	H. R. Center	Nov. 1, 1887	p. m.	40.00	do	do	p. m.	100.00
88	Miss M. L. Nicholson	Nov. 19, 1887	p. m.	50.00	do	do	p. m.	90.00
89	Alex. Jones	Dec. 16, 1887	p. m.	45.00	Watchman	Assistant in hatchery	p. m.	60.00
90	E. F. Locke	Feb. 27, 1888	p. m.	50.00	Assistant in hatchery	Foreman	p. m.	60.00
91	F. S. Conly	Mar. 31, 1888	p. m.	55.00	Second mate	Second mate	p. m.	55.00
92	W. E. Stuart	Apr. 1, 1888	p. m.	15.00	Observer of temperature	Observer of temperature	p. m.	15.00
93	T. W. Keller	do	p. m.	75.00	Clerk	Clerk	p. m.	75.00
94	Mrs. I. M. Palmer	Apr. 3, 1888	p. m.	60.00	do	do	p. m.	75.00
95	J. A. Pinkerton	Apr. 17, 1888	p. m.	40.00	Night watchman	Assistant in hatchery	p. m.	40.00
96	H. S. Hinrichs	Apr. 23, 1888	p. m.	40.00	Clerk	Clerk	p. m.	60.00
97	G. H. Lambson	May 1, 1888	p. m.	45.00	Messenger apprentice	Messenger assistant	p. m.	60.00
98	F. P. Hagan	do	p. m.	45.00	do	do	p. m.	60.00
99	George Williams	June 1, 1888	p. m.	45.00	Cook	Cook	p. m.	45.00
100	John Gay	July 1, 1888	p. m.	125.00	Inspector of stations	Inspector of stations	p. m.	125.00
101	Francis McCormick	July 5, 1888	p. m.	40.00	Copyist	Clerk	p. m.	50.00
102	R. O. Sweeney	Sept. 9, 1888	p. m.	125.00	Superintendent of station	Superintendent of station	p. m.	150.00
103	Henry Douglass	Nov. 1, 1888	p. m.	100.00	do	do	p. m.	100.00
104	Andrew McCormick	do	p. m.	50.00	Fish-culturist	Fish-culturist	p. m.	75.00
105	Daniel McLaghlan	do	p. m.	50.00	Fireman	Fireman	p. m.	50.00
106	S. S. Bass	do	p. m.	90.00	Laborer	Assistant in hatchery	p. m.	90.00
107	A. C. Adams	Jan. 1, 1889	p. m.	115.00	Captain, schooner <i>Grampus</i>	Captain schooner <i>Grampus</i>	p. m.	115.00
108	Miss Bessie S. Stocks	Jan. 22, 1889	p. m.	40.00	Copyist	Copyist	p. m.	40.00
109	W. C. Kendall	Feb. 4, 1889	p. m.	60.00	Assistant, schooner <i>Grampus</i>	Assistant in scientific inquiry	p. m.	60.00
110	F. F. Dimick	Apr. 15, 1889	p. m.	25.00	Statistical agent	Statistical agent	p. m.	25.00
111	S. LeR. Pritchard	Apr. 16, 1889	p. m.	50.00	Clerk, statistics	Clerk, statistics	p. m.	65.00
112	Charles H. Stevenson	May 2, 1889	p. m.	30.00	Statistical agent	Statistical agent	p. m.	75.00
113	Ansley Hall	May 8, 1889	p. m.	45.00	do	do	p. m.	75.00
114	Henry V. Wilson	May 17, 1889	p. m.	100.00	Assistant in scientific inquiry	Assistant in scientific inquiry	p. m.	100.00
115	William Goffin	June 18, 1889	p. m.	20.00	Laboratory attendant	Laboratory attendant	p. m.	20.00
116	S. P. Bartlett	July 1, 1889	p. m.	150.00	Agent in fish distribution	Agent in fish distribution	p. m.	150.00
117	H. C. Fassett	May 14, 1889	p. m.	69.00	Clerk <i>Albatross</i>	Clerk, <i>Albatross</i>	p. m.	69.00
118	Angus J. McNabb	July 1, 1889	p. m.	50.00	Fireman	Fireman	p. m.	50.00
119	N. B. Miller	do	p. m.	100.00	Assistant, <i>Albatross</i>	Assistant, <i>Albatross</i>	p. m.	100.00
120	T. C. Pearce	Apr. 20, 1889	p. m.	45.00	Apprentice messenger	Assistant messenger	p. m.	60.00
121	Mrs. Fanny B. Pryor	July 8, 1889	p. m.	40.00	Charwoman	Charwoman	p. m.	40.00
122	Theodore F. Slack	July 10, 1889	p. m.	45.00	Skilled laborer	Skilled laborer	p. m.	55.00
123	L. E. Baldrige	Aug. 29, 1889	p. d.	1.25	Laborer	Watchman	p. m.	40.00
124	Miss C. E. Gill	Nov. 1, 1889	p. m.	50.00	Clerk	Clerk	p. m.	50.00
125	James I. Corvin	Nov. 8, 1889	p. m.	30.00	Laborer	Laborer	p. m.	30.00
126	S. F. Denton	Nov. 20, 1889	p. m.	125.00	Draughtsman	Draughtsman	p. m.	125.00
127	R. R. Gurley	Mar. 11, 1890	p. m.	100.00	Assistant, steamer <i>Fish Hawk</i>	Assistant, steamer <i>Fish Hawk</i>	p. m.	100.00
128	George A. Neall	Apr. 20, 1890	p. m.	45.00	Car messenger	Car messenger	p. m.	45.00
129	Frank C. James	Apr. 21, 1890	p. m.	45.00	do	do	p. m.	45.00
130	Frank Hill	May 1, 1890	p. m.	8.00	Office messenger	Office messenger	p. m.	8.00
131	M. R. Craig	May 15, 1890	p. m.	45.00	Apprentice messenger	Apprentice messenger	p. m.	45.00
132	Charles H. Wonson	Nov. 8, 1888	p. m.	60.00	Ship's writer	Ship's writer	p. m.	60.00
And enlisted men.								
Total								10,748.66½

* On leave of absence without pay.

C.—List of persons who were in the regular employment of the Commission when the present Commissioner assumed charge, but who are no longer in its service.

Name.	Position.	Annual compensation.	Remarks.
J. H. Kidder	Assistant Commissioner.....	\$3,000	Resigned to enter Smithsonian Institution; since deceased.
J. J. Corridon.....	Clerk, office of Commissioner.....	1,200	Resigned voluntarily to enter Railway Mail Service.
H. P. Jerrell	Clerk, division of records.....	1,000	Resigned voluntarily to enter War Department.
E. S. Tennent	Clerk, division of property.....	828	Resigned voluntarily to enter Post-Office Department.
L. D. Terrell	Clerk, division of distribution.....	720	Resigned voluntarily, owing to ill health.
Clarence E. Latimer	Clerk, division of records	840	Resigned voluntarily to enter Census Office.
Miss A. W. Smith.....	Clerk, office of accounts.....	660	Resigned voluntarily to marry.
Leslie A. Lee	Assistant, steamer <i>Albatross</i>	1,800	Resigned temporary service for cruise.
A. E. Verrill	Assistant, New Haven, Conn	1,500	Work discontinued.
Thomas Lee	Assistant, steamer <i>Albatross</i>	1,440	Resigned voluntarily to enter business.
Peter Parker	Assistant, Washington, D. C.....	900	Do.
H. H. Stromberger	Clerk, steamer <i>Albatross</i>	720	Resigned; appointee of commanding officer.
Dennis M. Cole	Preparator, steamer <i>Albatross</i>	600	Temporarily employed for cruise only.
Miss K. G. Bush	Clerk, New Haven, Conn.....	540	Work discontinued.
Miss C. E. Bush	do	480	Do.
Thomas Watkins	Janitor and messenger, Washington, D. C.....	480	Resigned voluntarily to enter National Museum.
W. L. Conway	Watchman and laborer, Washington, D. C.....	540	Dismissed.
Richard Lynch	Watchman, ponds, Washington, D. C.....	180	Ponds discontinued.
Seymour Bowers	Assistant superintendent, Michigan stations.....	1,500	Resigned voluntarily to enter business.
M. S. Root	Foreman, Northville, Michigan, station	900	Do.
Frank S. Harmon.....	Clerk, Northville, Michigan, station	600	Discontinued; temporary employé.
Loren W. Green	Assistant superintendent Pacific coast stations.....	1,440	Trout station discontinued.
Reuben G. Green	Laborer Pacific coast stations.....	666	Do.
Robert Radcliff.....	do	360	Do.
C. B. Hudson	Draughtsman.....	600	Resigned voluntarily to go to New York as artist; still employed by the job.
Charles B. Jarvis.....	Messenger.....	240	Temporarily employé; services dispensed with.
Mrs. A. L. Stimpson	Janitrix	240	Services unnecessary, offices being given up.
William M. Kimball.....	Messenger.....	180	Resigned.
William O. Buck.....	Foreman Maine stations.....	900	Temporarily employé.
John Jansen	Carpenter, Wood's Holl Station, Massachusetts.....	900	Resigned to go to Newfoundland as expert fish-culturist.
George J. Griffith	Cook, Havre de Grace Station, Md.....	480	Discharged; temporary employé.
James A. Peters.....	do	480	Do.
R. Edward Earl.....	Assistant in charge statistical inquiry.....	2,200	Resigned voluntarily to enter National Museum.
Merwin P. Snell.....	Clerk, Washington, D. C.....	720	Resigned voluntarily to accept a position in Catholic University.
D. E. Collins	First mate, schooner <i>Grampus</i>	1,380	Resigned voluntarily on account of ill health.

D.—The organization and personnel of the permanent force of the Fish Commission as constituted January 1, 1888.

Position.	Name.	Annual compensation.
U. S. Commissioner of Fisheries.....	G. Brown Goode	(*)

* No salary.

GENERAL ADMINISTRATION.

<i>Office of Commissioner.</i>		
Assistant Commissioner	J. H. Kidder.....	\$3,000
Stenographer	Edward Hayes.....	1,800
Clerk	J. J. Corridon.....	1,200
Clerk	E. C. Bryan	780
Messenger.....	George E. Butler.....	540
<i>Office of accounts.</i>		
Disbursing agent.....	H. A. Gill.....	2,200
Clerk	Anthony C. Addison.....	1,320
Clerk	Miss A. W. Smith	660
Clerk	Miss M. L. Nicholson	600
<i>Office of records and publications.</i>		
Chief.....	C. W. Smiley.....	2,000
Clerk	C. W. Scudder	1,800
Clerk	H. P. Jerrell	1,000
Clerk	Miss Julia L. Rockwell.....	840
Clerk	Clarence E. Latimer.....	840
Clerk	H. P. Parker	660
<i>Property office.</i>		
Chief clerk	J. P. Wilson	2,000
Clerk	Edward S. Tennent.....	828
Clerk	Miss Anne C. Lincoln.....	600
<i>Engineer office.</i>		
Civil engineer and draughtsman.....	C. E. Gorham	1,800
Draughtsman.....	E. I. Rogers.....	720
Draughtsman.....	C. B. Hudson.....	600
<i>General offices.</i>		
Janitor	S. J. Hare	720
Do	Washington Robinson.....	720
Do	M. N. Tune	540
Janitrix	Mrs. A. L. Stimpson.....	240
Messenger.....	William H. Brittain.....	300
Do	Albert J. Stoerzer	300
Do	Chas. B. Jarvis.....	240
Do	W. M. Kimball.....	180

DIVISION OF FISH-CULTURE.*

<i>Office force.</i>		
Chief	M. McDonald	\$2,800
Stenographer	J. J. O'Connor.....	1,800
Clerk	L. D. Terrell	720
Do	F. P. Fennell.....	600
<i>Propagation.</i>		
Maine stations:		
Superintendent	C. G. Atkins	2,400
Foreman	W. O. Buck	900
Wood's Holl Station, Mass.:		
Machinist	John Maxwell.....	1,200
Carpenter.....	John Jansen.....	900
Laborer.....	Patrick Barry	480
Do	Anders Solvin	480
Cook, men's mess.....	George I. Griffiths.....	480

* Not then defined but including the personnel given under propagation and distribution.

D.—The organization and personnel of the permanent force, etc.—Continued.

DIVISION OF FISH-CULTURE—Continued.

Position.	Name.	Annual compensation.
<i>Propagation—Continued.</i>		
Cold Spring Harbor Station, N. Y.:		
Fish-cultural assistant	Fred Mather	\$500
Havre de Grace (Battery Station) Md.:		
Superintendent	W. de C. Ravenel	1,500
Cook	James A. Peters	480
St. Jerome's Station, Md.:		
Watchman	Alexander Jones	540
Wytheville Station, Va.:		
Superintendent	George A. Seagle	900
Assistant	George A. Jones	660
Messenger	W. K. Hancock	240
Central Station, Washington, D. C.:		
Superintendent of hatching	W. F. Page	1,200
Superintendent of aquaria	W. P. Seal	1,500
General assistant	J. E. Brown	1,200
Machinist	W. R. Sauerhoff	960
Laborer	W. H. Morgan	600
Watchman	William Maynard	540
Laborer	Robert Timbers	540
Carp-ponds, Washington, D. C.:		
Superintendent	Rudolph Hessel	1,800
Foreman	Z. H. Goldsmith	840
Watchman and laborer	Thomas Curtin	660
Do	W. L. Conway	540
Arsenal Ponds, Washington, D. C.:		
Watchman and laborer	Richard Lynch	180
Northville Station, Michigan:		
Superintendent	F. N. Clark	2,200
Assistant superintendent	Seymour Bowers	1,500
Foreman	M. S. Root	900
Assistant	H. D. Dean	600
Clerk	Frank S. Harmon	600
Alpena Station:		
Foreman	S. P. Wires	900
Assistant	E. A. Tulian	600
Pacific Coast Stations:		
Superintendent	Livingston Stone	2,000
Assistant	Loren W. Green	1,440
Laborer	Reuben G. Green	666
Do	Robert Radcliffe	360
Ten-Pound Island Station, Gloucester, Mass.:		
Assistant in hatchery	Richard Dana	720
Cook	H. B. Shorter	540
Fish-cultural experts unassigned, but sent where needed...	S. G. Worth	1,500
	E. M. Robinson	960
	W. P. Sauerhoff	900
	George H. Tolbert	900
	D. W. Kenly	780
<i>Distribution.</i>		
Captain, car No. 1	Newton Simmons	1,200
Captain, car No. 2	George H. H. Moore	1,200
Captain, car No. 3	J. F. Ellis	1,200

DIVISION OF SCIENTIFIC INQUIRY.

Assistant in charge	Richard Rathbun	\$2,200
Ichthyologist	Dr. T. H. Bean	2,100
Assistant, New Haven, Conn.	Prof. A. E. Verrill, of Yale College.	1,500
Assistant, Washington, D. C.	Peter Parker	900
Clerk, New Haven, Conn.	Miss K. J. Bush	540
Do	Miss C. E. Bush	480
Collector, Wood's Holl, Mass.	V. N. Edwards	720
Recorder of water temperature, Fort Washington, Md.	Mrs. Sarah Joyce	60
Janitor and messenger	Thomas Watkins	480
<i>Steamer Albatross.</i>		
Scientific assistant	Leslie A. Lee	1,800
Assistant and naturalist	Charles H. Townsend	1,200
Do	Thomas Lee	1,440
Clerk	H. H. Stromberger	720
Preparator	Dennis M. Cole	600

D.—*The organization and personnel of the permanent force, etc.*—Continued.

DIVISION OF STATISTICAL INQUIRY.*

Position.	Name.	Annual compensation.
Assistant in charge	R. E. Earll	\$2, 200
Clerk, Washington, D. C	W. A. Wilcox	1, 500
Do	Hugh M. Smith	960
Do	Merwin P. Snell	720
Do	W. H. Abbott	600
Do	H. R. Center	600
Collector, Gloucester, Mass	S. J. Martin	600
<i>Schooner Grampus.</i>		
Captain	J. W. Collins	2, 000
First mate	D. E. Collins	1, 380
Second mate	Edward E. Hahn	900
Ship's writer	A. B. Alexander	720
Crew .....	.....	
Total .....	.....	105, 034

*Now fisheries division.

E.—*Organization and personnel of the U. S. Commission of Fisheries as now constituted, June 1, 1890.*

[The organization of the Fish Commission as now constituted provides for four divisions, under which are included all expenditures and personnel and all work performed. The divisions are as follows: (1) The general administration; (2) the division of inquiry in regard to food-fishes; (3) the division of fisheries and statistics; (4) the division of fish-culture.]

GENERAL ADMINISTRATION.

The Commissioner	Marshall McDonald *	\$5, 000
<i>Commissioner's office.</i>		
Clerk and stenographer	Edward Hayes*	1, 800
Messenger	George E. Butler*	600
<i>Office of chief clerk.</i>		
Chief clerk	J. J. O'Connor*	2, 400
Clerk	F. P. Fennell *	1, 200
Record clerk	Charles W. Scudder*	1, 200
Clerk	Miss Julia L. Rockwell*	840
Clerk	Mrs. I. McB. Palmer	900
<i>Office of library and stationery.</i>		
Librarian	C. W. Smiley, * on indefinite leave without pay.	
Clerk	T. W. Keller	900
Clerk	Albert J. Stoerzer*	600
Clerk	H. P. Parker*	840
<i>Engineer office.</i>		
In charge	Lient. W. B. Bayley. U. S. Navy.	
Engineer and draughtsman	C. E. Gorham*	\$6 per d.
Draughtsman	E. I. Rogers*	900
Type-writer copyist	Miss Bessie Stocks	480
<i>Office of accounts.</i>		
Disbursing agent	Herbert A. Gill*	2, 400
Clerk	Anthony C. Addison*	1, 500
Clerk	Miss M. L. Nicholson*	1, 080
Clerk	Miss Caroline E. Gill	600
Copyist	W. H. Brittain*	540

E.—*Organization and personnel of the U. S. Commission of Fisheries as now constituted, June 1, 1890—Continued.*

Position.	Name.	Annual compensation.
<i>Office of property.</i>		
Property clerk.....	J. Paul Wilson*	\$2, 000
Clerk.....	Miss Anne C. Lincoln*	600
Ichthyologist and editor.....	Dr. T. H. Bean*	2, 400
Skilled artist.....	S. F. Denton.....	1, 500
<i>Maintenance of offices.</i>		
Messenger.....	Washington Robinson*	600
Janitor and messenger.....	James H. Johnston†	600
Charwoman.....	Mrs. Fannie B. Pryor.....	480
Laborer.....	S. J. Hare*	720
Machinist.....	Walter R. Sauerhoff*	960

DIVISION OF FISH-CULTURE.

<i>Propagation.</i>		
Office of inspector of stations:		
Inspector.....	John Gay.....	\$1, 500
Clerk.....	R. E. Lewis†.....	600
Maine stations:		
Superintendent.....	C. G. Atkins*.....	1, 800
Assistant.....	Clarence S. Grindle†.....	540
Foreman Craig's Brook Station.....	H. H. Buck†.....	1, 200
Ten Pound Island Station, Gloucester, Mass.:		
Foreman.....	E. F. Locke.....	720
Cold Spring Harbor Station, L. I., N. Y.:		
Assistant.....	Fred Mather*.....	500
Wood's Holl station, Mass.:		
Superintendent.....	John Maxwell*.....	1 200
Assistant.....	Vinal N. Edwards*.....	720
Laborer.....	Patrick Barry*.....	540
Do.....	Anders Solvin*.....	540
Cook enlisted men's mess.....	Henry B. Shorter†.....	540
Laboratory attendant.....	William Goffin.....	240
Battery station, Susquehanna River:		
Superintendent.....	W. de C. Ravenal*.....	1, 500
Central station, Washington, D. C.:]		
Superintendent.....	S. G. Worth*.....	1, 800
Clerk.....	P. T. Yeatman†.....	900
Assistant in hatchery.....	Alexander Jones*.....	720
Watchman.....	M. N. Tune*.....	600
Watchman and laborer.....	William Maynard*.....	720
Laborer.....	Daniel Moore†.....	420
Aquaria, central station:		
Superintendent.....	W. P. Seal*.....	1, 500
Skilled laborer.....	Robert Timbers*.....	720
Carp ponds, Washington, D. C.:		
Superintendent.....	Rudolph Hessel*.....	1, 800
Foreman.....	Z. H. Goldsmith*.....	840
Watchman.....	Thomas Curtin*.....	690
Laborer.....	William Dickerson†.....	660
Skilled laborer.....	Theodore F. Slack.....	660
Wytheville Station, Va.:		
Superintendent.....	George A. Seagle*.....	1, 200
Assistant.....	George A. Jones*.....	660
Laborer.....	James L. Corvin.....	360
Sandusky station, Ohio, (belongs to State, operated temporarily pending completion of Put-in-Bay station):		
Superintendent.....	Henry Douglass.....	1, 200
Northville station (Michigan):		
Superintendent.....	Frank N. Clark*.....	2, 200
Foreman.....	H. D. Dean*.....	900
Assistant.....	A. W. Root†.....	720
Night watchman.....	J. A. Pinkerton.....	480
Alpena station:		
Foreman.....	S. P. Wires*.....	900
Assistant.....	E. A. Tulian*.....	600
Duluth station (new station):		
Sup rintendent.....	R. O. Sweeny.....	1, 800
Fish culturist.....	Andr w McCormick.....	900

E.—Organization and personnel of the U. S. Commission of Fisheries as now constituted,
June 1, 1890—Continued.

DIVISION OF FISH-CULTURE—Continued.

Position.	Name.	Annual compensation.
<i>Propagation—Continued.</i>		
Duluth station—Continued.		
Foreman.....	Angus J. McNabb.....	\$600
Fireman.....	Daniel McLachlan.....	600
Leadville station (new station):		
Superintendent.....	E. M. Robinson*.....	1,500
Assistant.....	C. C. Lewis†.....	1,080
Fort Gaston station, Cal. (new station):		
Foreman.....	W. H. Morgan*.....	1,080
Baird (McCloud River station), Cal.:		
Superintendent.....	George B. Williams, jr.†....	1,800
Assistant in hatchery.....	S. S. Bass.....	1,080
Clackamas station (Oregon):		
Superintendent.....	Livingston Stone (on leave without pay).*	
Acting superintendent.....	W. F. Hubbard†.....	1,500
Neosho station, Mo. (new station):		
Superintendent.....	W. F. Page*.....	1,500
Watchman.....	L. E. Baldrige.....	480
Messenger.....	Frank Hill.....	96
Fish cultural experts not attached to stations, but assigned where needed:		
Fish cultural expert and carpenter.....	W. P. Sauerhoff*.....	960
Do.....	George H. Tolbert*.....	960
Do.....	D. W. Kenly*.....	960
Fish cultural expert.....	Richard Dana*.....	900
Do.....	W. K. Hancock*.....	720
Do.....	L. G. Harron†.....	720
<i>Distribution of food-fishes.</i>		
Office of distribution:		
Superintendent of distribution.....	George H. H. Moore*.....	1,800
Record clerk.....	F. L. Donnelly†.....	1,200
Property and transportation clerk.....	J. E. Brown*.....	1,200
Car No. 1:		
Captain.....	Newton Simmons*.....	1,200
Assistant messenger.....	Michael Gleason†.....	720
Do.....	F. P. Hagan†.....	720
Apprentice messenger.....	Mark Craig.....	540
Car No. 2:		
Captain.....	W. A. Dunnington†.....	1,200
Messenger.....	E. R. Lucast.....	900
Assistant messenger.....	Giles Lambson.....	720
Do.....	T. C. Pearce.....	720
Cook.....	George Williams.....	540
Car No. 3:		
Captain.....	J. F. Ellis*.....	1,200
Messenger.....	R. S. Johnson†.....	900
Apprentice messenger.....	George Neil.....	540
Do.....	Frank James.....	540
Cook.....	John Smith.....	540
In charge distribution of indigenous fishes.....	S. P. Bartlett.....	1,800
Schooner <i>Grampus</i> :		
Captain.....	A. C. Adams.....	1,380
First mate.....	Edward E. Hahn*.....	900
Second mate.....	F. S. Conley.....	660
Ship's writer.....	C. H. Wonson.....	720
Enlisted men.....		

DIVISION OF SCIENTIFIC INQUIRY.

Assistant in charge of division.....	Richard Rathbun*.....	\$2,700
Office:		
Principal clerk.....	H. R. Center*.....	1,200
Correspondence clerk.....	S. Hinrichs.....	720
Copyist.....	F. Mc Cormick.....	600
Laboratory, Washington		
Assistant.....	W. C. Kendall.....	720
Laboratory, Wood's Holl.		
Assistant.....	Dr. H. V. Wilson.....	1,200
Temperature observer.		
Fort Washington, Md.....	Sarah Joyce*.....	120
Washington, D. C.....	W. E. Stewart.....	180

E.—*Organization and personnel of the U. S. Commission of Fisheries as now constituted, June 1, 1890—Continued.*

DIVISION OF SCIENTIFIC INQUIRY—Continued.

Position.	Name.	Annual compensation.
Steamer <i>Albatross</i> :		
Naturalist	C. H. Townsend *	\$1, 800
Fishery expert	A. B. Alexander *	1, 200
Assistant naturalist	N. B. Miller *	1, 200
Ship's writer	H. C. Fassett	828
Steamer <i>Fish Hawk</i> :		
Surgeon and naturalist	Dr. R. R. Gurley	1, 200

DIVISION OF FISHERIES.

Assistant in charge	J. W. Collins *	\$2, 700
Clerk	Hugh M. Smith *	1, 380
Stenographic clerk	E. C. Bryan *	1, 200
Clerk	S. Le R. Pritchard	780
Clerk	Lillian M. Collins †	600
Field Agent	W. H. Abbott *	900
Do	C. H. Stevenson	900
Do	Ansley Hall	900
Do	W. A. Wilcox *	1, 380
Local agent, Gloucester, Mass.	S. J. Martin *	600
Local agent, Boston, Mass.	F. F. Dimick	300

NOTE.—Names designated by a * were on the regular rolls of the Commission January 1, 1888; names designated by a † had been previously in the service of the Commission, but were rated as temporary employes; names without special designation are original appointments of the present Commissioner

F.—*List of employes appointed by the present Commissioner during incumbency of office.*

Name and position.	Compensation per month.	Remarks.
E. F. Locke, foreman	\$60. 00	Foreman of hatchery at Gloucester station; first operated winter of 1887-'88.
F. S. Conly, second mate	55. 00	Schooner <i>Grampus</i> ; appointed on recommendation of captain.
W. E. Stuart, observer of temperature...	15. 00	
T. W. Keller, clerk	75. 00	General offices.
Mrs. I. M. Palmer, clerk	75. 00	Do.
J. A. Pinkerton, assistant in hatchery...	40. 00	
H. S. Hinrichs, clerk	60. 00	Division of scientific inquiry; recommendation of assistant in charge.
G. H. Lambson, fish messenger	60. 00	Division of distribution; recommendation of Superintendent of distribution.
F. P. Hagan, fish messenger	60. 00	Do.
George Williams, cook	45. 00	Do.
John Gay, inspector of stations	125. 00	Selected for expert qualifications.
Francis McCormick, clerk	50. 00	Division of scientific inquiry; recommendation of assistant in charge.
R. O. Sweeny, superintendent of station.	150. 00	Selected for expert qualifications; new station.
Henry Douglass, superintendent of station.	100. 00	Superintendent Sandusky station under State board; continued in position under U. S. F. C.
Andrew McCormick, fish-culturist	75. 00	Duluth station, Minn.; recommendation of Superintendent.
Daniel, McLachlan, fireman	50. 00	Do.
S. S. Bass, assistant in hatchery	90. 00	Baird station, Cal.; recommendation of superintendent.
A. C. Adams, captain schooner <i>Grampus</i>	115. 00	Selected for expert qualifications.
Miss Bessie S. Stocks, copyist	40. 00	General offices.
W. C. Kendall, assistant in scientific inquiry.	60. 00	Recommendation of assistant in charge division of scientific inquiry.
F. F. Dimick, statistical agent	25. 00	Recommendation of assistant in charge division of fisheries.
S. Le R. Pritchard, clerk, statistics	65. 00	Do.
Charles H. Stevenson, statistical agent..	75. 00	Do.

F.—List of employes appointed by the present Commissioner, etc.—Continued.

Name and position.	Compensation per month.	Remarks.
Ansley Hall, statistical agent.....	\$75. 00	Recommendation of assistant in charge division of fisheries.
Henry V. Wilson, assistant in scientific inquiry.	100. 00	Resident scientific assistant, Wood's Holl station, Mass.
William Goffin, laboratory attendant....	20. 00	Recommendation of assistant in charge of scientific inquiry.
S. P. Bartlett, agent in fish distribution	150. 00	Special qualifications and knowledge of region in which work is done.
H. C. Fassett, clerk, steamer <i>Albatross</i> ..	69. 00	Recommendation of commanding officer.
Angus J. McNabb, fireman.....	50. 00	Duluth station; recommendation of superintendent.
N. B. Miller, assistant, steamer <i>Albatross</i>	100. 00	Recommendation of commanding officer.
T. C. Pearce, assistant fish messenger...	60. 00	Recommendation of superintendent of distribution.
Mrs. Fanny B. Pryor, charwoman.....	40. 00	General offices.
Theo. F. Slack, skilled laborer.....	55. 00	Carp ponds, Washington, D. C.
L. E. Baldrige, watchman.....	40. 00	Neosho, Mo.; recommendation of superintendent.
Miss C. E. Gill, clerk.....	50. 00	General offices; recommendation of disbursing agent.
James L. Corvin, laborer.....	30. 00	Wytheville, Va.; recommendation of superintendent.
S. F. Denton, draughtsman.....	125. 00	Expert.
R. R. Gurley, assistant, steamer <i>Fish Hawk</i> .	100. 00	Surgeon and naturalist.
George A. Neill, car messenger.....	45. 00	
Frank C. James, car messenger.....	45. 00	
Frank Hill, messenger.....	8. 00	Recommendation of superintendent of Neosho station, Mo.
M. R. Craig, apprentice fish messenger..	45. 00	
Charles H. Wonson, ship's writer.....	60. 00	Schooner <i>Grampus</i> ; appointed on recommendation of captain.

G.—Classification and comparison of expenditures on account of salary of permanent employes, as shown by the pay-rolls of January 1, 1880, and June 1, 1890. (See Tables D and E.)

January 1, 1888.		June 1, 1890.	
Commissioner of Fisheries	No salary.	Commissioner of Fisheries	\$5, 000

DIVISION OF GENERAL ADMINISTRATION.

Office of Commissioner.....	\$7, 320	Office of Commissioner.....	\$2, 400
Office of accounts.....	4, 780	Office, chief clerk.....	6, 540
Office of records and publications.....	6, 420	Office of accounts.....	6, 120
Office of property.....	3, 428	Office of library and stationery.....	2, 340
Engineer office.....	3, 120	Office of property.....	2, 600
General offices.....	3, 240	Engineer office.....	3, 180
		General offices.....	3, 360
		Ichthyologist and editor.....	2, 400
		Skilled artist.....	1, 500
	28, 308		30, 440

DIVISION OF FISH CULTURE.

<i>Propagation of food-fishes.</i>		<i>Propagation of food-fishes.</i>	
Office force	\$5, 920	Office inspector of stations	\$2, 100
Maine salmon stations	3, 300	Main salmon stations	3, 540
Ten-Pound Island station, Mass	1, 260	Ten-Pound Island station, Mass	720
Wood's Holl station, Mass	3, 540	Wood's Holl station, Mass	3, 780
Cold Spring Harbor station, N. Y.....	500	Cold Spring Harbor station, N. Y.....	500
Battery station, Md	1, 980	Battery station, Md	1, 500
St. Jerome's station, Md	540		
Central station, Washington, D. C	6, 540	Central station, Washington, D. C	5, 160
		Central station, Aquaria.....	2, 220
Carp-ponds, Washington, D. C.....	3, 840	Carp ponds, Washington, D. C	4, 620
Arsenal ponds, Washington, D. C	180		

G.—Classification and comparison of expenditures on account of salary, etc.—Continued.

DIVISION OF FISH CULTURE—Continued.

January 1, 1888.		June 1, 1890.	
<i>Propagation of food-fishes—Continued.</i>		<i>Propagation of food-fishes—Continued.</i>	
Wytheville station, Va.....	\$1, 800	Wytheville station, Va.....	\$2 220
Northville station, Mich.....	5, 800	Northville station, Mich.....	4, 300
Alpena station, Mich.....	1, 500	Alpena station, Mich.....	1, 500
		Sandusky station, Ohio.....	1, 200
		Duluth station, Minn.....	3, 900
		Leadville station, Colo.....	2, 580
Pacific coast stations:		Pacific coast stations:	
General Superintendent.....	2, 000	Ft. Gaston station, Cal.....	1, 080
Baird Trout station, Cal.....	2, 466	Baird salmon station, Cal.....	2, 880
		Clackamas station, Oregon.....	1, 500
		Neosho station, Mo.....	2, 076
Fish cultural experts not attached to stations but assigned where needed.....	5, 040	Fish cultural experts not attached to stations, but assigned where needed.....	5, 220
	46, 206		52, 596
<i>Distribution of food-fishes.</i>		<i>Distribution of food-fishes.</i>	
Office of distribution.....		Office of distribution.....	4, 200
Car No. 1.....	1, 200	Car No. 1.....	3, 180
Car No. 2.....	1, 200	Car No. 2.....	4, 080
Car No. 3.....	1, 200	Car No. 3.....	3, 720
	3, 600	Distribution of indigenous fishes.....	1, 800
			16, 980
<i>Schooner Grampus.</i>		<i>Schooner Grampus.</i>	
Pay-roll of officers.....	\$5, 000	Pay-roll of officers.....	\$3, 660
<i>Division of Scientific Inquiry.</i>		<i>Division of Scientific Inquiry</i>	
Pay-roll of personnel ashore.....	8, 980	Pay-roll of personnel ashore.....	7, 440
Pay-roll of steamer <i>Albatross</i>	5, 760	Pay-roll of steamer <i>Albatross</i>	5, 028
	14, 740	Pay-roll of steamer <i>Fish Hawk</i>	1, 200
			13, 668
<i>Division of Statistical Inquiry (now Division of Fisheries).</i>		<i>Division of Statistical Inquiry (now Division of Fisheries).</i>	
Pay-roll of office.....	6, 580	Pay-roll of office.....	6, 660
Pay-roll of field agents.....	600	Pay-roll of field-agents.....	4, 980
	7, 180		11, 640
Total.....	105, 034	Total.....	128, 984

H.—Number of permanent employes in the service of the commission January, 1888, and June, 1890, arranged under respective divisions of the work.

January, 1888.	No.	June, 1890.	No.
Administration.....	29	Administration*.....	29
Propagation:		Propagation:	
Fish culture.....	48	Fish culture.....	57
Distribution†.....	3	Distribution†.....	18
Scientific inquiry.....	9	Scientific inquiry.....	8
Schooner <i>Grampus</i>	4	Schooner <i>Grampus</i>	4
Steamer <i>Albatross</i>	5	Steamer <i>Albatross</i>	4
Steamer <i>Fish Hawk</i>		Steamer <i>Fish Hawk</i>	1
Division of fisheries.....	7	Division of fisheries.....	11
	105		132

* (1) Under *administration*, June, 1890, is included Dr. T. H. Bean, ichthyologist and editor, who, in 1888, was included under scientific inquiry. (2) Under *administration*, June 1, 1890, is also included S. F. Denton, skilled artist; work of this kind in 1888, and prior thereto, was done by temporary employes, who do not appear upon the list of regular employes, though an equivalent expenditure was incurred.

† In 1888, and prior thereto, the work of distribution was performed by temporary employes and occupied but a portion of the year; only the car-captains were carried upon the regular rolls. With the increase and diversification of this work it has been made continuous, and the increase of fifteen in the personnel of distribution in 1890, as shown above, is due to this fact. The temporary employes of 1888 constitute a part of the permanent or regular force of 1890.

The WITNESS. I respectfully submit and ask to be incorporated in my evidence data relating to the increased appropriations and alleged extravagance of expenditures on the part of the present Commissioner of Fish and Fisheries.

The statements are as follows:

For the fiscal year ending June 30, 1887, the appropriations on account of propagation and distribution were as follows:

Propagation of food-fishes.....	\$130,000.00
Maintenance of ponds and distribution.....	45,000.00
Total.....	175,000.00

During this year there were no separate appropriations, as at present, for the inquiry in regard to food-fishes, and for collecting the statistics of the fisheries. The expenses incurred for these objects were charged against the general appropriation for propagation and distribution.

For the fiscal year 1887, these expenses were as follows:

Collection and arrangement of statistics.....	\$5,536.90
Scientific inquiry	7,514.66
Total	13,051.56

Deducting from the amount of the appropriations for propagation and distribution of food-fishes	175,000.00
The amount applied to inquiry and statistics.....	13,051.56

We have remaining a balance of..... 161,948.44
To provide for the expenses of the general administration and for the propagation and distribution of food fishes.

For the fiscal year ending June 30, 1890, the appropriations on account of propagation and distribution were as follows:

Salary of the commissioner	5,000.00
Propagation of food-fishes.....	130,000.00
Appropriation for Neosho station continued.....	5,000.00
Appropriation for Neosho station (deficiency).....	20,000.00
Distribution of food fishes.....	35,000.00

Making a total of..... 195,000.00
and an increase of \$33,051.56 in those items of the appropriation which are applied.

(1) To the expenses of the general administration.

(2) To propagation of food-fishes.

(3) To the distribution of food-fishes.

The expenses of the general administration for the fiscal years 1887 and 1890 were about the same.

The increase above indicated of \$33,051.56 was applied to the increased expenses of distribution and to the maintenance of the additional stations which have been established since 1887, and have been in active operation during the fiscal year just closed.

A comparison of the conditions and results of the fish cultural work for the years 1887 and 1890 will furnish the committee the data by which to arrive at a just conclusion as to the character and efficiency of the administration of the present commissioner.

First as to the distribution of food-fishes.

In 1887, the distribution service was a temporary service occupying only a portion of the year. The personnel consisted of temporary employes, with the exception of the three car-captains, who were carried on the permanent rolls and received salaries of \$100 per month each. The cost of the service of distribution of food-fishes for 1887, as given in my report to Congress, Mis. Doc. No. 88, first session, Fiftieth Congress, was as follows:

Distribution of salmon and trout	\$3,764.19
Distribution of whitefish	1,585.73
Distribution of shad	10,701.97
Distribution of carp	8,463.72
Collection and distribution of native trout and bass.....	373.88
Distribution, general construction, equipment, repairs, etc	444.03

Making a total of..... 25,333.52

The total distribution of eggs, fry, and yearling fish for the season of 1887 was 210,625,000. The total mileage of car and messenger service, 87,396 miles.

The cost of the service of distribution for the fiscal year ending June 30, 1890, will consume the entire amount appropriated to this purpose, viz: \$35,000.

The total distribution of eggs, fry, and yearling fish for the fiscal year 1890 was 333,929,000. The total mileage of the car and messenger service, 125,321 miles.

Comparing the distribution service of 1887 with that of 1890, we have in 1890 increases as follows:

In expenditures	\$9,666.48
In mileage of car and messengers.....miles..	37,925
In number of eggs, fry, and yearling fish distributed	123,304,000

In further explanation of the work of distribution of food-fishes, I respectfully submit the following tables. These are compiled from the reports of the superintendents of stations furnishing the eggs and fish for distribution, and from the report of the messengers employed in making the distribution. The original reports upon which the compilations are based are on file in the offices of the Commission and are accessible to the committee for verification. The tables referred to are as follows:

- Table showing distribution of eggs and fish for the fiscal year ending June 30, 1887.
- Table showing distribution of eggs and fish for fiscal year ending June 30, 1888.
- Table showing distribution of eggs and fish for fiscal year ending June 30, 1889.
- Table showing distribution of fish and eggs for fiscal year ending June 30, 1890.
- Summary of distribution and mileage from July 1, 1886, to June 30, 1890, arranged by years and species.

The work of distribution in 1890 included the collection and distribution of the indigenous fishes of the Mississippi Valley, a work which had not been inaugurated in 1887, and which cost for the fiscal year ending June 30, 1890, \$7,311.

Distribution of eggs and fish from January 1, 1886, to June 30, 1887.

Species.	Eggs.	Fish.	Total.
Salmonidæ:			
Atlantic salmon.....	754,000	446,588	1,200,588
Landlocked salmon	377,500	44,017	421,517
Rainbow trout.....	429,000	66,412	495,412
Brook trout.....	82,000	9,199	91,199
Lake trout		162,723	162,723
Von Behr trout	84,500	26,500	111,000
Saibling.....	18,000		18,000
Shad	10,718,000	99,752,000	110,470,000
Whitefish	32,600,000	62,070,000	94,670,000
Carp		136,163	136,163
Miscellaneous species:			
Grayling		2	2
Codfish		662,000	662,000
Smelt		2,100,000	2,100,000
Lobsters		5,000	5,000
Red-eye perch.....		2,328	2,328
Tench		1,202	1,202
Goldfish		2,805	2,805
Brook pike.....		14	14
Soles.....		19	19
Eels		200	200
Black bass		48	48
Sun-fish.....		125	125
Rock-fish.....		75,000	75,000
White perch		68	68
Total.....	45,063,000	165,562,413	210,625,413

Distribution of eggs and fish from July 1, 1887, to June 30, 1888.

Species.	Eggs.	Fish.	Total.
Salmonidæ:			
Atlantic salmon	924,000	459,200	1,383,200
Landlocked salmon	345,000	45,400	390,400
Rainbow trout	341,000	155,856	496,856
Brook trout	215,000	31,286	246,286
Lake trout	547,000	105,760	652,760
Loch Leven trout	50,000	.....	50,000
Von Behr trout	5,000	55,010	60,010
Saibling	7,417	.....	7,417
Shad	39,095,000	134,631,000	173,726,000
Whitefish	32,412,000	19,300,000	51,712,000
Carp .....	.....	175,410	175,410
Miscellaneous species:			
Codfish	189,432	9,470,640	9,660,072
Flounders .....	.....	220,000	220,000
Lobsters	196,000	614	196,614
Red-eye perch .....	.....	3,105	3,105
Gold-fish .....	.....	5,437	5,437
Black bass .....	.....	550	550
Total	74,326,849	164,659,268	238,986,117

Distribution of eggs and fish from July 1, 1888, to June 30, 1889.

Species.	Eggs.	Fish.	Total.
Salmonidæ:			
Atlantic salmon	1,395,000	868,961	2,263,961
Landlocked salmon	510,000	312,934	822,934
California salmon	3,450,000	6,000,000	9,450,000
Rainbow trout	167,000	97,213	264,213
Brook trout	207,000	35,450	242,450
Lake trout	2,197,000	1,560,035	3,757,035
Loch Leven trout	120,000	.....	120,000
Von Behr trout	110,000	.....	110,000
Saibling	9,000	.....	9,000
Shad .....	.....	96,454,000	96,454,000
Whitefish	54,650,000	81,135,000	135,785,000
Carp .....	.....	170,402	170,402
Miscellaneous species:			
Wall-eye pike .....	.....	50,195,600	50,195,600
Codfish .....	.....	19,148,000	19,148,000
Sheepshead .....	.....	7,300,000	7,300,000
Pollock .....	.....	7,258,000	7,258,000
Lobsters .....	.....	333	333
Red-eye perch .....	.....	5,630	5,630
Tench .....	.....	1,530	1,530
Gold-fish .....	.....	9,610	9,610
Cat-fish .....	.....	20,180	20,180
Buffalo .....	.....	10,360	10,360
Crappie .....	.....	16,768	16,768
White bass .....	.....	15,552	15,552
Black bass .....	.....	17,687	17,687
Sun-fish .....	.....	3,688	3,688
Pickrel .....	.....	7,811	7,811
White perch .....	.....	2,485	2,485
Native carp .....	.....	460	460
Total	62,815,000	270,647,689	333,462,689

Statement of the distribution of eggs, fry, and yearling fish by the U. S. Fish Commission for the year ending June 30, 1890.

Variety.	Eggs.	Fry.	Yearling.	Total.
Atlantic salmon	890,000	503,000	88,842	1,481,842
Landlocked salmon	851,000	480,470	17,280	1,348,750
California salmon	1,199,000	3,831,000	.....	5,030,000
Rainbow trout	170,000	.....	58,936	229,436
Brook trout	365,000	194,381	9,893	569,274
Lake trout	2,650,000	1,170,000	13,132	3,833,132
Loch Leven trout	177,000	11,250	9,989	198,239
Von Behr trout	114,000	7,280	6,351	127,631
Black Spotted trout .....	.....	.....	1,000	1,000
Saibling	20,000	.....	.....	20,000
Whitefish	52,460,000	64,228,000	3,000	116,691,000
Shad .....	.....	85,796,000	.....	85,796,000
Pike perch	19,000,000	36,150,000	1,000	55,151,000
Codfish .....	.....	21,784,000	.....	21,784,000
Pollock .....	.....	14,899,000	.....	14,899,000
Haddock .....	.....	5,720,000	.....	5,720,000
Flat-fish .....	.....	4,087,000	.....	4,087,000
Lobsters	250,000	4,506,000	.....	4,756,000
Sea-bass .....	.....	3,454,000	.....	3,454,000
Mackerel .....	.....	688,000	.....	688,000
Tautog .....	.....	362,000	.....	362,000
Squeteague .....	.....	227,000	.....	227,000
Scup .....	.....	396,000	.....	396,000
Smelt .....	.....	3,950,000	.....	3,950,000
Tomcod .....	.....	2,200,000	.....	2,200,000
Yellow perch .....	.....	754,000	16,323	770,323
Red-eye perch .....	.....	.....	4,388	4,388
Gold-fish .....	.....	.....	16,005	16,005
German carp .....	.....	.....	26,316	26,316
Catfish .....	.....	.....	11,036	11,036
Buffalo .....	.....	.....	2,215	2,215
Crappie .....	.....	.....	18,575	18,575
Striped bass .....	.....	.....	10,604	10,604
Black bass .....	.....	.....	63,145	63,145
Sun-fish .....	.....	.....	6,973	6,973
Brook pike .....	.....	.....	70	70
White perch .....	.....	.....	200	200
Total	78,146,500	255,398,381	385,273	333,930,154

Summary of distribution and mileage from January 1, 1885 to June 30, 1890, inclusive. Arranged by years and species.

	1886-'87.		1887-'88.		1888-'89.		1889-'90.	
	Total distributed.	Mileage	Total distributed.	Mileage	Total distributed.	Mileage	Total distributed.	Mileage
Salmonidæ.....	2,500,441	16,233	3,286,929	14,124	17,039,593	39,693	12,839,304	34,427
Shad.....	110,470,000	32,335	173,726,000	38,016	96,454,000	18,804	85,796,000	22,902
Whitefish.....	94,670,000	12,340	51,712,000	4,321	135,785,000	3,313	116,691,000	2,366
Carp.....	136,163	25,499	175,410	28,594	170,402	17,613	26,316	9,739
Miscellaneous fishes.....	2,848,809	989	10,085,778	4,566	84,013,694	36,589	118,577,234	55,887
Total.....	210,625,413	97,396	238,986,117	89,631	333,462,689	116,012	333,929,854	125,321

Now, as to the propagation of food-fishes and the maintenance of fish-cultural stations.

The increased appropriation in 1890 over 1887 in the items for propagation and distribution of food-fishes being \$33,051.56 and the increased expenses of distribution being, as above stated, \$9,666.48, we have a balance of only \$23,385.08, for the maintenance of the additional stations established since the close of the fiscal year, 1887, and in active operation during the fiscal year ending June 30, 1890.

In this connection the following comparison between the fish-cultural operations of the fiscal years 1887 and 1890 will enable your committee to determine whether the present commissioner has exercised care and economy in regulating and controlling the expenditures of the Commission:

During the fiscal year ending June 30, 1887, there were twelve fish-hatching stations in active operation, viz:

- | | |
|--|--|
| 1. Schoodic Station, Grand Lake Stream, Maine. | 6. Fort Washington Station, Potomac River, Maryland. |
| 2. Craig's Brook Station, Maine. (Brook Station, Penobscot Station, auxiliary to Craig's.) | 7. Central Station, Washington, D. C. |
| 3. Wood's Holl Station, Massachusetts. | 8. Carp Ponds, Washington, D. C. |
| 4. Cold Spring Harbor Station, New York. | 9. Wytheville Station, Virginia. |
| 5. Battery Island, Susquehanna River, Maryland. | 10. Northville Station, Michigan. |
| | 11. Alpena Station, Michigan. |
| | 12. McCloud River Trout Ponds, California. |

The production of eggs and fry from these twelve stations, including also the shad-hatching work of the Fish Hawk on the Delaware River, was, in round numbers, 259,000,000.

During the fiscal year ending June 30, 1890, the number of fish-hatching stations in active operation was twenty-one, as follows:

- | | |
|---|--|
| 1. Craig's Brook station, Maine. | 10. Central station, Washington, D. C. |
| 2. Schoodic station, Grand Lake Stream, Maine. | 11. Carp ponds, Washington, D. C. |
| 3. Green Lake station, Maine. | 12. Wytheville station, Virginia. |
| 4. Ten-Pound Island station, Gloucester, Mass. | 13. Alpena station, Michigan. |
| 5. Wood's Holl station, Massachusetts. | 14. Northville station, Michigan. |
| 6. Cold Spring Harbor station, New York. | 15. Sandusky station, Ohio. |
| 7. Gloucester City station, New Jersey. | 16. Duluth station, Minnesota. |
| 8. Battery Island station, Susquehanna River, Maryland. | 17. Baird Salmon station, McCloud River, California. |
| 9. Fort Washington station, Potomac River, Maryland. | 18. Fort Gaston station, California. |
| | 19. Clackamas station, Oregon. |
| | 20. Leadville station, Colorado. |
| | 21. Neosho station, Missouri. |

Of the twelve stations in operation during the fiscal year 1887, one was discontinued, viz., the trout-breeding station at Baird, Cal. The eleven remaining stations have been operated during the fiscal year ending June 30, 1890, and ten additional stations, as follows:

- | | |
|--|---|
| 1. Green Lake station, Maine. | 6. Baird Salmon station, McCloud River, California. |
| 2. Ten Pound Island station, Gloucester, Mass. | 7. Fort Gaston station, California. |
| 3. Gloucester City station, New Jersey. | 8. Clackamas station, Oregon. |
| 4. Sandusky station, Ohio. | 9. Leadville station, Colorado. |
| 5. Duluth station, Minnesota. | 10. Neosho station, Missouri. |

And the production of eggs, fry, and yearling fish for the fiscal year 1890, 358,000,000.

Collating and comparing the data relating to the fish-cultural operations of 1887 and 1890, we have the following summary:

Number of stations operated:

In 1887	12
In 1890	21

An increase of..... 9

Production of eggs, fry, and yearling fish:

In 1887	259,000,000
In 1890	358,000,000

An increase of..... 99,000,000

Amount available for the propagation of food-fishes and for the general administration:

In 1887	\$136,614.92
In 1890 (including salary of Commissioner)	160,000.00

We have, as above stated, an increase of \$23,385.08 for the maintenance of the nine additional stations operated during this fiscal year, or an average allotment per station of \$2,598.34.

The actual cost of the maintenance of the additional stations during the fiscal year 1890 was as follows:

Gloucester City station, New Jersey	\$2,133.09
Green Lake station, Maine	1,170.97
Ten-Pound Island station, Massachusetts	4,851.05
Sandusky station, Ohio	3,740.05
Duluth station, Minnesota	8,998.49
Baird Salmon station, California	6,899.56
Fort Gaston station, California	2,580.58
Clackamas station, Oregon	6,543.73
Leadville station, Colorado	3,603.17
Neosho station, Missouri	4,738.47

Total	45,259.16
-------------	-----------

Deducting from this the cost of maintenance of the Baird trout-breeding station, which was discontinued in 1888, and the cost of watchman at St. Jerome, aggregating	4,300.28
--	----------

We have an actual increase of expenditures on account of additional stations maintained in 1890, of	40,958.88
And an average cost per station of	4,550.92

The difference between the actual cost of the maintenance of these additional stations and the increase in the appropriations available for this purpose, amounting to \$17,613.80, represents the reduction of expenses effected by a compact organization of the work of the commission, and by improvements in methods and facilities for carrying it on.

In further explanation of the statements made in regard to propagation and maintenance of stations I respectfully submit the following table, which is a comparative statement of production of eggs and fish at the stations of the U. S. Fish Commission for the fiscal years 1887 and 1890, arranged by stations and species:

Comparative statement of production at the stations of the U. S. Fish Commission for the fiscal years 1886-'87 and 1889-'90.

Station.	1886-'87.	1889-'90.
Maine:		
Bucksport (Craig's Brook station):		
Atlantic salmon	924,000	978,842
Landlocked salmon		17,280
Brook trout		1,022
Rainbow trout		747
Grand Lake Stream (Schoodic station):		
Landlocked salmon	377,500	965,000
Green Lake station:		
Landlocked salmon		160,000
Massachusetts:		
Gloucester (Ten Pound Island station):		
Codfish		14,957,593
Pollock		14,899,183
Haddock		5,192,214
Wood's Holl:		
Codfish	22,040,000	6,826,150
Haddock		528,190
Flat-fish		4,086,750
Lobsters		4,506,100
Sea bass		3,454,660
Mackerel		688,700
Tautog		362,700
Squeteague		227,696
Scup		396,390
New York:		
Cold Spring Harbor:		
Atlantic salmon	449,073	506,400
Landlocked salmon	31,020	80,000
Lake trout	137,775	470,000
Von Behr trout	24,500	56,000
Loch Leven trout		15,000
Shad	100,000	
Whitefish	942,306	
Lobsters	5,000	
Smelt	2,100,000	3,950,000
Tom-cod		2,200,000
Pennsylvania and New Jersey:		
Steamer <i>Fish Hawk</i> , Delaware River:		
Shad	23,196,000	24,265,000

Comparative statement of production at the stations of U. S. Fish Commission, etc.—Cont'd.

Station.	1886-'87.	1889-'90.
New Jersey:		
Gloucester City:		
Shad.....		6, 204, 000
Maryland:		
Battery Island:		
Shad.....	44, 000, 000	24, 885, 000
Rockfish.....	75, 000	
Fort Washington and Central station:		
Shad.....	36, 000, 000	26, 719, 000
District of Columbia:		
Central:		
Whitefish.....	5, 000, 000	4, 400, 000
Landlocked salmon.....		17, 700
Brook trout.....		30, 500
Yellow perch.....		754, 000
Carp-ponds:		
Carp.....	133, 769	30, 726
Gold-fish.....	2, 775	15, 395
Virginia:		
Wytheville:		
Rainbow trout.....	100, 230	205, 035
Brook trout.....		1, 145
Von Behr trout.....		230
Lake trout.....	1, 200	
Red-eye perch.....	2, 193	3, 474
Black bass.....	48	
Carp.....	2, 375	2, 330
Gold-fish.....	50	1, 289
Michigan:		
Alpena:		
Whitefish.....	56, 800, 000	33, 600, 000
Northville:		
Whitefish.....	65, 600, 000	28, 460, 000
Rainbow trout.....	196, 350	71, 643
Brook trout.....	186, 756	347, 800
Lake trout.....	6, 150	2, 813, 132
Loch Leven trout.....		247, 000
Von Behr trout.....		139, 175
Ohio:		
Sandusky:		
Whitefish.....		52, 628, 000
Pike perch.....		55, 200, 000
Minnesota:		
Duluth:		
Whitefish.....		24, 850, 000
Lake trout.....		700, 000
Brook trout.....		27, 882
Von Behr trout.....		7, 280
Loch Leven trout.....		11, 245
Landlocked salmon.....		18, 270
Pike perch.....		500, 000
California:		
Baird (McCloud River Salmon station):		
Rainbow trout.....	444, 400	
California salmon.....		1, 197, 000
Fort Gaston:		
California salmon.....		90, 000
Oregon:		
Clackamas:		
California salmon.....		3, 766, 475
Colorado:		
Leadville:		
Brook trout.....		201, 881
Missouri:		
Neosho:		
Lake trout.....		750
Von Behr trout.....		12, 000
Rainbow trout.....		22, 980
Illinois:		
Collections and distribution from Quincy:		
Catfish.....		11, 036
Buffalo.....		2, 215
Crappie.....		18, 575
Striped bass.....		10, 604
Black bass.....		63, 145
Sunfish.....		6, 973
Yellow perch.....		16, 323
Pike perch.....		1, 000
Brook pike.....		70
White perch.....		200
Red-eye perch.....		2, 854
Total.....	258, 878, 374	358, 106, 949

The WITNESS. In connection with that I submit a digest of appropriations for the fiscal years 1887, 1888, 1889, and 1890, the same being classified so as to show—

By the CHAIRMAN:

Q. You give the special appropriations?—A. Yes, sir; all the appropriations, and this digest indicates when any new stations have come in and the increase in connection with them.

The digest is as follows:

Digest of appropriations for the fiscal years 1887, 1888, 1889, 1890.

	1887.	1888.	1889.	1890.
Compensation of commissioner	None.	\$1, 840. 68	\$5, 000. 00	\$5, 000. 00
Rent of offices	\$2, 040. 00	2, 040. 00	2, 500. 00	.....
Propagation of food-fishes (general item)	130, 000. 00	130, 000. 00	130, 000. 00	130, 000. 00
Propagation of food-fishes (deficiency item) .....	.....	.....	3, 000. 00	20, 000. 00
Propagation food-fishes. (Maintenance Neosho station) .....	.....	.....	5, 000. 00	5, 000. 00
Maintenance of ponds and distribution of food-fishes	45, 000. 00	45, 000. 00	31, 180. 00	35, 000. 00
Total for general administration, propagation, and distribution	177, 040. 00	178, 880. 68	176, 680. 00	195, 000. 00
Maintenance of vessels:				
General items	45, 000. 00	45, 000. 00	43, 900. 00	43, 900. 00
Deficiency .....	.....	.....	10, 000. 00	10, 000. 00
Special appropriations	27, 500. 00	11, 500. 00	.....	.....
Total vessels	72, 500. 00	56, 500. 00	53, 900. 00	53, 900. 00
Division of inquiry. (Inquiry respecting food-fishes.) .....	.....	.....	20, 000. 00	20, 000. 00
Division of fisheries and statistics .....	.....	.....	10, 000. 00	10, 000. 00
New stations and permanent improvements to stations:				
Fish hatchery, Duluth, Minn	10, 000. 00	.....	4, 000. 00	.....
Fish hatchery, Columbia River, Oregon .....	.....	10, 000. 00	.....	.....
Fish hatchery, Neosho, Mo .....	.....	.....	8, 000. 00	.....
Quarters building, Baird, Cal .....	.....	.....	.....	4, 000. 00
Fish hatchery, Lake County, Colo .....	.....	.....	.....	15, 000. 00
Fish hatchery, Lake Erie, Ohio .....	.....	.....	.....	20, 000. 00
Fish hatcheries, Craig's Brook and Reed's Pond, Maine .....	.....	.....	.....	11, 000. 00
Drainage of carp-ponds, Washington, D. C .....	.....	5, 000. 00	.....	.....
Total new stations	\$10, 000. 00	\$15, 000. 00	\$12, 000. 00	\$50, 000. 00
Damages to schooners <i>S. O. Wave</i> and <i>Champion</i> .....	.....	.....	937. 60	.....

The WITNESS. I submit also in connection with the inquiry in regard to the administration of Fort Washington station, a statement of the financial and other operations of the hauling seine run at Fort Washington station by the U. S. Fish Commission, covering the seasons of 1888, 1889, and 1890. This discusses that whole question and shows the disposition of the money, and shows a saving by the operation of the seine.

The statement is as follows:

Statement of the financial and other operations of the hauling seine run at Fort Washington station, Maryland, by the U. S. Fish Commission in the collection of shad eggs.

[For the Commissioner. By S. G. Worth¹, superintendent. June, 1890.]

Year of operations.	No. days fishing.	No. employés.	Whole No. shad caught.	Whole No. herring caught.	No. shad sold by commission merchants.	No. herrings sold by commission merchants.	Amount cash received from commission sales of shad.	Amount of cash received from commission sales of herrings.	Net price of shad, each.	No. of shad sold on the shore.
1888.....	51	13	11, 212	52, 441	10, 615	9, 058	\$780.34	\$32.51	0.73	58
1889.....	42	15	6, 217	132, 862	5, 724	74, 575	438.36	139.17	0.76	160
1890.....	² 40	15	4, 606	72, 738	3, 828	23, 493	281.30	46.39	0.73	385
.....	.....	.....	22, 035	258, 041	20, 167	³ 107, 126	⁴ 1, 500 00	⁴ 218.07	7.45	603

Year of operations.	Amount cash received on shore sales of shad.	Shad unmarketable and used on the shore. (Number.)	Number herrings sold on the shore.	Amount cash received on shore sales of herrings.	No. herrings unmarketable and allowed to the seine crew.	Whole amount cash or proceeds received from season's catch of fish.	Amount seine earnings paid for services and boat hire, on vouchers. (To crew.)	Amount seine earnings paid out, on voucher, for equipment and minor travel.	Amount seine earnings unexpended.	Amount appropriation paid to operate seine (mostly equipment).
1888....	\$6.60	539	30, 233	\$90.60	13, 150	\$910.05	\$797.50	\$68.38	\$44.17	\$340.44
1889....	20.85	333	51, 287	165.53	7, 000	763.91	693.07	46.47	24.37	⁵ 544.68
1890....	43.27	⁶ 393	49, 245	119.52	(⁷)	490.48	517.75	.....	27.27	324.47
	70.72	⁸ 1, 265	130, 765	375.65	⁹ 20, 150	2, 164.44	2, 008.32	114.85	¹⁰ 41.27	1, 209.59

¹ S. G. Worth has been in charge seasons 1888, 1889, and 1890.

² In 1888, eleven seine-haulers; in 1889, 12 seine-haulers; in 1890, also one horse, one captain, one mender and one scow-tender.

³ But few bunch fish are caught and the amount sales is included in herrings.

⁴ Returns made by W. E. Stuart and R. A. Golden, Washington, D. C., Theo. Ballenger of Alexandria, Va.

⁵ Entire new seine and hauling lines (\$352.68) bought this season.

⁶ Seventy-eight lost in settlements, 174 were cut, and 141 uncollected for.

⁷ Short catch crew paid for their herrings.

⁸ Twenty spawn-takers and hatchery attendants, consume what shad they want during the season of forty to fifty days.

⁹ Some caught when there was neither market, boat, nor shore customers; sometimes crew make an extra haul.

¹⁰ Impracticable to accumulate a considerable surplus, as any excess in earnings is absorbed in prolonged fishing operations. More employés too, have been taken on to promote efficiency and raise work in grade.

THE COST OF EGGS.

Year.	Seine eggs.			Other eggs.			
	No. eggs produced.	Amount appropriation money paid out to obtain eggs.	Cost, out of the appropriation, of eggs per million.	Number taken (<i>i. e.</i> , outside of seine, or by usual method).	Amount appropriation, money paid out to obtain other eggs.	Cost, out of the appropriation per million.	Financial gain arising from use of seine (in addition to the acquisition of 50,000,000 eggs).
1888.....	22, 657, 000	\$340.44	\$15.03	58, 520, 000	\$4, 835.27	\$82.62	\$1, 531.39
1889.....	17, 738, 000	544.68	30.70	40, 495, 000	3, 638.41	89.79	1, 048.14
1890.....	10, 262, 000	324.47	31.62	24, 603, 000	2, 093.79	85.10	548.81
Total or average.....	50, 657, 000	1, 209.59	23.87	123, 618, 000	10, 567.47	85.48	3, 128.34

Comparative statement of egg production.

THREE SEASONS.

	1885.	1886.	1887.	Total
Entire production	22, 576, 000	36, 362, 000	59, 435, 000	118, 373, 000
Seine production	7, 280, 000	11, 848, 000	20, 956, 000	40, 084, 000

THREE LAST SEASONS.

	1888.	1889.	1890.	Total.
Entire production	81, 177, 000	58, 233, 000	34, 865, 000	174, 275, 000
Seine production	22, 657, 000	17, 738, 000	10, 262, 000	50, 657, 000

Total gain in entire production in three last seasons	55, 902, 000
Total gain in seine production in three last seasons	10, 573, 000

Statement showing the effect of operations of Fort Washington station upon the work of central station.

[For the Commissioner, by S. G. Worth, superintendent, June, 1890.]

Output shad fry, central station.		Output shad fry, central station.	
Seasons.	Number.	Seasons.	Number.
1885	14, 791, 000	1888	53, 015, 000
1886	24, 997, 000	1889	34, 501, 000
1887	44, 736, 000	1890	26, 719, 000
For three seasons	84, 524, 000	For three seasons	114, 235, 000
Annual average for period	28, 174, 000	Annual average for period	38, 078, 000

Gain, in number, 29,711,000. Gain, in per cent., 35.

Statement of Fort Washington seine account with S. G. Worth, superintendent, 1888.

DR.

Services and boat hire.

Apr.	4.	To amount paid Henry Raum, delivering seine boat.....	\$2. 00
June	4.	To amount paid Jane Brass, hire of seine-boat.....	50. 00
	4.	To amount paid Henry Dent, services as seine hauler	80. 50
	4.	To amount paid Henry Dent, services, extra spawn taking.....	10. 00
	4.	To amount paid William Gladden, services, seine hauler.....	69. 00
	4.	To amount paid James Wood, services, seine hauler.....	55. 00
	4.	To amount paid William Hawkins, services, seine hauler.....	40. 00
	4.	To amount paid James Newman, services, seine hauler	69. 00
	4.	To amount paid Jerre Gladden, services, seine hauler.....	62. 00
	4.	To amount paid Frank Butler, services, seine hauler.....	55. 00
	4.	To amount paid Harry Lewis, services, seine hauler.....	55. 00
	4.	To amount paid Harry Butler, services, seine hauler.....	55. 00
	4.	To amount paid Billy Logans, services, seine hauler	55. 00
	4.	To amount paid Rob. Lyles, service, seine hauler	55. 00
	7.	To amount paid L. G. Harron, sixty days' extra pay.....	60. 00
	7.	To amount paid L. G. Harron, hire of boat.....	10. 00
	8.	To amount paid John A. Willett, hire of boat.....	2. 00
	3.	To amount paid J. M. Fant, services	3. 00
	3.	To amount paid T. W. Keller, extra services	10. 00

Equipment, travel, etc.

Apr.	19.	To amount paid H. Kirk, jr., Alexandria, Va., seine twine	. 46
May	2.	To amount paid Jos. Brager, Alexandria, Va., rubber boots.....	22. 00
	2.	To amount paid H. Kirk, jr., Alexandria, Va., twine and oars.....	4. 18
	18.	To amount paid H. Kirk, jr., Alexandria, Va., oars	6. 70
	30.	To amount paid James F. Carter & Sons, Washington, D. C., knife	. 15
	30.	To amount paid F. A. Reed & Co., Alexandria, Va., ice	2. 00
	30.	To amount paid Jas. F. Carter & Sons, Washington, D. C., chisel.....	. 30
	30.	To amount paid J. Broadus, Alexandria, Va., packing barrel.....	. 60

June 2.	To amount paid John Combs, ice and freight.....	\$1. 25
4.	To amount paid F. A. Reed & Co., Alexandria, Va., ice.....	1. 00
7.	To amount paid M. Ruber & Sons, bedstead.....	6. 00
14.	To amount paid George J. Baur, repairs spouting H. Q. Bdg.....	6. 09
16.	To amount paid J. P. Bauer, services spouting H. Q. Bdg.....	5. 50
July 3.	To amount paid Wm. H. Butler, Washington, D. C., paints and brushes.....	4. 75
June 22.	To amount paid D. Moore, services as laborer.....	2. 15
30.	To amount paid steamer <i>Corcoran</i> , freight.....	. 25
22.	To amount paid D. Moore, service as laborer.....	5. 00
Amount disbursed.....		<u>865. 68</u>

CR.

By amounts received from sales of fish, as follows:

Cash from regular market sales.....	812. 85
Cash from shore sales.....	97. 20
Cash from all sales.....	<u>910. 05</u>
Amount with S. G. Worth to balance.....	<u>44. 17</u>
	<u>910. 05</u>

Independent of seine account.

Amounts separately paid out of the appropriation by Mr. Gill, disbursing officer:

L. G. Harron, seine captain, two months' pay, at \$60.....	\$120. 00
Lafayette Davis, seine mender, two months' pay, at \$60.....	120. 00
E. G. Wheeler, 60-gallon tar cauldron.....	10. 00
E. G. Wheeler, tar, \$3.50; Rye straw, \$2.50.....	6. 00
Barber & Ross, lumber, windlasses, and quarters.....	13. 09
J. S. Johnson & Co., Baltimore, Md., rope and netting.....	71. 35
	<u>340. 44</u>

Statement of Fort Washington seine account with S. G. Worth, superintendent, 1889.

DR.

Services and boat-hire.

May 19.	To amount paid Harry Butler, services as seine hauler.....	\$45. 00
19.	To amount paid Bob Syles, services as seine hauler.....	43. 65
19.	To amount paid Billy Hawkins, services as seine hauler.....	44. 70
19.	To amount paid Harry Lewis, services as seine hauler.....	45. 00
19.	To amount paid James Wood, services as seine hauler.....	42. 00
19.	To amount paid Andrew Dent, services as seine hauler.....	45. 00
19.	To amount paid Daniel Webster, services as seine hauler.....	42. 00
19.	To amount paid James Newman, services as seine hauler.....	49. 00
19.	To amount paid Billy Logan, services as seine hauler.....	42. 00
19.	To amount paid William Gladden, services as seine hauler.....	50. 65
19.	To amount paid Jerre Gladden, services as seine hauler.....	49. 00
19.	To amount paid Harry Dent, services as seine hauler.....	57. 17
19.	To amount paid H. Raum, rent of scow.....	7. 00
19.	To amount paid Jane Brass, rent of seine boat.....	50. 00
9.	To amount paid Willis Hines, services as laborer.....	4. 50
22.	To amount paid Willis Hines, chopping wood for launch.....	. 50
23.	To amount paid John Willet, rent of fish scow.....	10. 00
23.	To amount paid L. G. Harron, extra 60 days' services seine captain.....	60. 00
27.	To amount paid T. W. Keller, record clerk, extra.....	5. 90

Equipment, travel, etc.

Apr. 14.	To amount paid C. W. Johnson, Alexandria, Va., two wooden scoops.....	1. 50
22.	To amount paid Charles Baum, Washington, D. C., two window-shades.....	. 90
24.	To amount paid C. W. Johnson, Alexandria, Va., oars.....	1. 12
22.	To amount paid J. H. Richardson, Washington, D. C., one stick broom.....	. 35
25.	To amount paid J. H. Richardson, Washington, D. C., one long oil-coat.....	2. 75
May 3.	To amount paid H. Kirk, jr., Alexandria, Va., twelve oar-locks.....	2. 10
6.	To amount paid Joseph Springman, Washington, D. C., iron fish-bailer.....	1. 25
6.	To amount paid Great Falls Ice Company, ice.....	3. 00
12.	To amount paid Alexandria, Va., Ice Company, ice.....	2. 80
21.	To amount paid H. Kirk, jr., Alexandria, Va., oars and twine.....	3. 40
27.	To amount paid steamer <i>Corcoran</i> , freight.....	2. 10
29.	To amount paid for shad for casts by Professor Hendley.....	1. 00
29.	To amount paid B. G. Harris, travel expenses to his home.....	2. 00
29.	To amount paid mess, meals furnished launch crew.....	11. 00
29.	To amount paid meals and personal expenses, S. G. Worth, five trips to Washington, D. C. (O. B.).....	10. 00
7.	To amount paid freight, Alexandria and Washington Ferry, on crates eggs.....	1. 20

Amount disbursed..... 739. 54

CR.

By amounts received from sales of fish, as follows:

Cash from regular market sales.....	\$577.53
Cash from shore sales.....	186.38
Cash from all sales.....	763.91
Amount with S. G. Worth to balance.....	24.37
	<u>763.91</u>

Independent of seine account.

Amounts separately paid out of the appropriation by Mr. Gill, disbursing officer:

Mr. Blades, seine mender, 50 days, at \$2.....	\$100.00
Benjamin Montgomery, scow-tender, 49 days, at \$1.50.....	73.50
William J. Hooper & Co., Baltimore, 500 pounds, of netting, 150 corks, 825 pounds of rope, 15 glass balls, 40 pounds twine.....	352.68
E. G. Wheeler, Washington, D. C., 1 barrel tar.....	3.50
Goodyear Rubber Company, 3 pairs boots.....	15.00
	<u>544.68</u>

Statement of Fort Washington seine account with S. G. Worth, superintendent, 1890.

DR.

Services and boat-hire.

May 17. To amount paid Jerre Gladden, services as seine hauler.....	\$47.00
17. To amount paid William Gladden, services as seine hauler.....	47.00
17. To amount paid Daniel Webster, services as seine hauler.....	47.00
17. To amount paid James Newman, services as seine hauler.....	47.00
17. To amount paid James Wood, services as seine hauler.....	47.00
17. To amount paid H. Dent, services as seine hauler.....	32.00
17. To amount paid Andrew Dent, services as seine hauler.....	25.00
17. To amount paid Robert Lyles, services as seine hauler.....	40.00
17. To amount paid Harry Lewis, services as seine hauler.....	40.00
17. To amount paid Harry Butler, services as seine hauler.....	40.00
17. To amount paid Gusty Anderson, services as seine hauler.....	40.00
17. To amount paid John Dent, services as seine hauler.....	16.00
17. To amount paid William Underwood, service horse at windlass.....	30.00
17. To amount paid employes mess, meals of launch crew.....	19.75
Amount disbursed.....	<u>517.75</u>

CR.

By amounts received from sales of fish as follows:

Cash from regular market sales.....	\$327.69
Cash from regular shore sales.....	162.79
Cash from all sales.....	490.48
Amount overpaid to credit of S. G. Worth, to balance.....	27.27
	<u>517.75</u>

Independent of seine account.

Amounts separately paid out of the appropriation by Mr. Gill, disbursing officer:

Henry Berry, seine mender, at \$2.....	94.00
Benjamin Montgomery, scow tender, at \$1.50.....	64.50
H. Dent, seine hauler, at \$1.33 $\frac{1}{3}$	22.67
A. Dent, seine-hauler, at \$1.....	17.00
John Dent, seine-hauler, at \$1.....	17.00
Jane Brass, hire of seine-boat.....	50.00
J. Willett, hire of scow.....	10.00
E. G. Wheeler, tar, straw, twine, etc.....	23.98
E. G. Wheeler, outstanding.....	10.00
Church & Stevenson, lumber (windlass).....	4.32
Goodyear Rubber Company, rubber boots.....	7.00
E. G. Wheeler, twine.....	1.50
Francis Miller, shore lamp-chimneys.....	2.50
	<u>324.47</u>

The WITNESS. I also wish to submit—I have it here in shape—a statement in regard to Mr. Rogers, one of the gentlemen who makes complaint—

Q. The Draughtsman?—A. Yes, sir; who makes complaint that he has not received compensation, or that promises have not been fulfilled.

The statement is as follows:

E. I. Rogers: Entry into service, March 20, 1886, as apprentice messenger in distribution service, at \$45 a month.

Paid March, 1886, as apprentice messenger	\$17. 42
Paid April, 1886, as apprentice messenger.....	45. 00
Paid May, 1886, as apprentice messenger.....	45. 00
Paid June 1 to 15, 1886, as apprentice messenger	22. 50
Paid June 16 to 30, 1886, as draughtsman, \$2 a day.....	26. 00
Paid July 1 to 5, 1886, as draughtsman, \$2 a day	8. 00
Paid July 26 to August 31, 1886, as apprentice messenger, \$45 a month.....	53. 71
Paid November, 1886, as apprentice messenger, \$45 a month	45. 00
Paid December, 1886, as apprentice messenger, \$45 a month.....	45. 00
Paid January 1 to July 31, 1887, as draughtsman, \$60 a month.....	360. 00
Paid August 1, 1887, to February 29, 1888, as inspector of construction of outlet sewer at carp ponds, Washington, D. C., at \$75 a month.....	525. 00
Paid March 1 to June 30, 1888, as draughtsman, at \$60 a month.....	240. 00
Paid July 1, 1888, to June 30, 1890, as draughtsman, at \$75 a month, except part of October, 1888 (furloughed).....	

By the CHAIRMAN:

Q. Will you please state to the committee the facts as to the employment and services rendered by Mr. E. I. Rogers?—A. Mr. Rogers entered the service of the Fish Commission in March, 1886, and this table gives a history of his employment since that time up to the present date, which paper I submit, from which it appears, contrary to the statement made by Mr. Rogers before the committee, that since I have been Commissioner he has been advanced from \$60 to \$75 per month.

Q. I think he stated that.—A. No, sir; he stated that he never had any advance except one given to him by Mr. Ferguson. He had, prior to my administration, a temporary increase of pay from August 1 to February 29, 1888, at which time he was serving as inspector upon some Government work that was in progress at the carp pond. At the conclusion of that work his pay was increased to \$60 and continued at that until the 30th of June, 1888, when I advanced his compensation to \$75 a month; that is in 1888. In October, 1888, having based my action upon reports of his intemperance and neglect of duty, I directed the chief clerk to discharge him, which was done, and subsequently he was, on October 27, reinstated on entering upon a pledge before a notary public of total abstinence for the period of five years from date. The whole correspondence relating to that matter I respectfully submit and ask to be made a part of my evidence.

The correspondence is as follows:

[Telegram.]

U. S. COMMISSION OF FISH AND FISHERIES,
Wood's Holl, Mass., October 2, 1888.

J. J. O'CONNOR,
U. S. Fish Commission, Washington, D. C.:

Relieve Mr. Rogers from duty in connection with engineer office, taking necessary steps to continue proper custody of the records and property. Instructions and orders by to-day's mail.

M. McDONALD.

U. S. COMMISSION OF FISH AND FISHERIES,
Wood's Holl, Mass., October 2, 1888.

E. I. ROGERS,
In charge Engineer Office, Washington, D. C.:

SIR: I have instructed the chief clerk to relieve you from duty in connection with the engineer office of the Commission. You are granted leave of absence, with pay, for fifteen days from and including October 1. You will have the opportunity to tender your resignation to take effect on and after October 15; failing to do this, I shall feel constrained to discharge you from the service of the U. S. Fish Commission.

You are fully aware of the circumstances which constrained me to put you in charge of the engineer office, and of the embarrassment and discredit to which the Government service has been subjected by the irregular habits of some of its employés. In placing you in charge of the records and property of the engineer office I assigned you to a position which did not require expert attainments to fill. It did and does require diligence, faithfulness, and regularity in the discharge of duties. These you have failed to give. The list of property which you were directed to make some weeks ago, and which should have been completed in a few days of diligent and steady work, has not been furnished, and you have reported to the chief clerk that it will require some weeks to complete the same. Meanwhile I have official information that you have been drinking; that you have brought liquor into the office and offered the same to employés, and that you have been in your office so far under the influence of liquor as to be incapable of the discharge of your duties.

I regret these things both on account of my kindly feelings to yourself and my warm personal relations to your friends, but I can not permit personal considerations to dominate my obligations as an officer of the Government.

Very truly yours,

M. McDONALD,
Commissioner.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., October 2, 1888.

E. I. ROGERS, Esq.,
U. S. Fish Commission, Washington, D. C.:

DEAR SIR: I am directed by the Commissioner to notify you that your services in connection with the engineer office will be discontinued after this date. You will please turn over to me the list (as far as prepared) called for some time ago, of maps and other drawing equipment now in the office.

Very respectfully,

J. J. O'CONNOR,
Chief Clerk.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., October 10, 1888.

Mr. ROGERS:

DEAR SIR: Pending further and fuller consideration of the matter, you are granted leave of absence, without pay, from and after October 15. In doing this I am influenced by no purpose to reconsider my determination to make a change in the engineer office; nor do I see that there will be any occasion for your services as a draughtsman. Whether it will be possible to provide a position for you in the clerical work is extremely doubtful. It is probable that your friends may be able to get you a position under the Architect of the Treasury, Colonel Fréret. I should advise you to make every effort to do so. The messenger service is distasteful to you and unsuitable for you every way. Should you in this emergency turn resolutely to business, take up what comes to your hand, pursue it assiduously and live temperately, you will certainly make for yourself a career and a home. If you continue in Government service, with a meager salary, supplying only your personal wants, you will be worse off every year of your life and grow morbid with discouragement. If you choose to enter business, take it up in a fair-minded way and pursue it diligently, you have certainly friends who will be interested in and work for your advance. I have been greatly concerned about you and have a true interest in your welfare, but I tell you frankly I can no longer permit personal sympathies or solicitation of friends weigh against my obligations as an officer of the Government.

Very truly yours,

M. McDONALD,
Commissioner.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., October 30, 1888.

E. I. ROGERS, Esq.,

U. S. Fish Commission, Washington, D. C.:

DEAR SIR: After full consideration of the matter in all of its relations, I have determined to restore you to duty in the Fish Commission, to take effect Nov. 1, 1888. You will be assigned to the same position previously filled by you, viz, the custody of the records, maps, and property of the engineer office of the Commission, and will be called upon to make such drawings or tracings as may be needed from time to time. You will report direct to the chief clerk, and all issues made of duplicates and all work done will be under authority issuing from the office of the Commissioner.

Very respectfully,

M. McDONALD,
Commissioner.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., October 4, 1888.

Hon. MARSHALL McDONALD,

Wood's Holl, Mass.:

DEAR SIR: Your letter of the 2d instant received, and I am very much grieved to receive the same.

I acknowledge that I was under the influence of liquor as has been reported to you and will take an oath that I will not touch any intoxicating drink for any term of years you may designate, if you will extend the same mercy to me that you have granted to others in the Commission. I beg of you to give me a chance for my manhood as it would break my mother's heart if I were discharged for drinking.

I bought a bottle of sourmash whisky for Colonel Fréret of the Treasury, with whom I have been boarding in the country, and at whose house in town I am now staying, and ask two gentlemen in the office if they had ever tasted it as I never had myself. I tasted it, and they did not.

I am willing to fill any position you may be pleased to put me in, and trusting this may find favor in your eyes, not so much for myself as for the one who loves me most—my mother,

I remain, most respectfully,

E. INGRAHAM ROGERS.

Inclosed I send you my pledge for five years.

CITY OF WASHINGTON, *District of Columbia*, ss:

Edward I. Rogers, personally known to me, came this day, and, upon his oath, swore that he would for five years from this date abstain from all alcoholic and maltic liquors as a beverage.

E. I. ROGERS.

Subscribed and sworn to before me this 5th day of October, 1888.

[SEAL.]

JOHN J. LINNEY,
Notary Public.

At 11 o'clock a. m. the subcommittee adjourned to meet at the call of the chairman.

WASHINGTON, D. C., *July 23, 1890.*

The subcommittee met at 10 o'clock a. m., pursuant to call of the chairman.

Present: Senators Stockbridge (chairman), Squire, and Blodgett.

The CHAIRMAN. Here are some papers, contracts, specifications, vouchers, etc., relating to the fish hatchery at Put-in-Bay, Lake Erie, which can go into the record.

The papers are as follows:

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to Frank Blaisdell, Dr.

July 1, 1889. To preparing plans and specifications for a fish-hatchery building, at Put-in-Bay, Lake Erie. 150.00

Witness:

A. C. ADDISON.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 3d day of July, 1889, one hundred and fifty dollars ———cents, in full of the above account.

\$150.00.

FRANK BLAISDELL.

[Indorsement on back.]

No. 1. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, July 1, 1889; name, Frank Blaisdell; amount, \$150.00; when paid, July 3, 1889.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered.]

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to S. J. Hare, Dr.

July 1, 1889. To preparing cyanotypes of plans of fish hatchery at Put-in Bay, Lake Erie \$60.00

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 6 day of July, 1889, sixty dollars ——— cents, in full of the above account.

\$60.00.

S. J. HARE.

[Indorsement on back.]

No. 2. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, July 1, 1899; name, S. J. Hare; amount, \$60.00; when paid, July 6, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered.]

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigencies necessitated their immediate delivery or performance.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to the Toledo Blade Co., Dr.

July 1, 1889. To advertising in "Toledo Daily Blade," May 20, 22, 24, 25, 27,
and 29, 1889. Proposals for construction of fish hatchery, Put-
in-Bay, Ohio, 6 times..... \$3.61

Received at Toledo, Ohio, of Herbert A. Gill, disbursing agent, U. S. Fish Com-
mission, this 6th day of July, 1889, three dollars sixty-one cents, in full of the
above account.

\$3.61.

THE TOLEDO BLADE CO.,
p. T. LANE, *Secretary and Treasurer.*

[Indorsement on back.]

No. 3. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of
account, July 1, 1889; name, The Toledo Blade Co.; amount, \$3.61; when paid, July
6, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned
were rendered].

The charges in this bill are just and reasonable, and the articles or services were
required by the United States Commission of Fish and Fisheries, and the public
exigency necessitated their immediate delivery or performance.—Herbert A. Gill.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to W. B. Bayley, P. A. Engr., U. S. N., Dr.

1889.

July 1. To mileage for travel performed in obedience to orders of the U. S.
Commissioner of Fish and Fisheries, under the following dates:

May 15. Washington, D. C., to Sandusky, Ohio, 574 miles at 8 cts.....	\$45.92
17. Sandusky, Ohio, to Put-in Bay Island, and return, 44 miles, at 8 cts.	3.52
19. Sandusky, Ohio, to Oswego, N. Y., 427 miles, at 8 cts.....	34.16
22. Oswego, N. Y., to Washington, D. C., 420 miles, at 8 cts.....	33.60
	\$117.20

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish
Commission, this 6 day of July, 1889, one hundred and seventeen dollars twenty
cents, in full of the above account.

\$117.20.

W. B. BAYLEY,
P. A. Engr., U. S. N.

[Indorsement on back.]

No. 4. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of
account, July 1, 1889; name, W. B. Bayley, P. A. Engr. U. S. N.; amount, \$117.20;
when paid, July 6, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned
were rendered].—W. B. Bayley, P. A. Engr.

The charges in this bill are just and reasonable, and the articles or services were
required by the United States Commission of Fish and Fisheries, and the public exi-
gency necessitated their immediate delivery or performance.—W. B. Bayley, P. A.
Engr. U. S. N.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to John Brown, jr., Dr.

July 1, 1889. To making surveys, making corners, and preparation of maps and description of ground on "Peach Point," Put-in-Bay, Ohio, donated to the United States for a fish hatchery..... \$12.00

Received at Put-in-Bay, Ohio, of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 8 day of July, 1889, twelve dollars and ——— cents, in full of the above account.

\$12.00.

JOHN BROWN, JR.

[Indorsement on back.]

No. 5. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, July 1, 1889; name, John Brown, jr.; amount, \$12.00; when paid, July 8, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered] and the charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—John Gay.

Approved.—Richard Rathbun, Acting U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to Geo. E. David, Dr.

1889.

July 1.	To traveling expenses, as follows:	
June 12.	To transfer of baggage in Washington.....	\$0.50
	To railroad fare, Washington to Wood's Holl.....	11.35
14.	To supper on Fall River boat.....	.75
	To state-room on Fall River boat.....	2.00
15.	To breakfast on Fall River boat.....	.60
	To baggage transfer in Wood's Holl.....	.25
		15.45
	Notary fee.....	.25
		\$15.70

Received at Wood's Holl, Mass., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 8th day of August, 1889, fifteen dollars seventy cents, in full of the above account.

\$15.70.

GEO. E. DAVID.

[Indorsement on back.]

No. 6. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, July 1, 1889; name, Geo. E. David; amount, \$15.70; when paid, August 8, 1889.

Correct.—H. A. Gill, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—W. B. Bayley.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—W. B. Bayley.

Approved.—Richard Rathbun, Acting U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to Geo. E. David, Dr.

1889.

July 1.	To traveling expenses under the following dates:	
June 4.	To transfer of baggage in Wood's Holl.....	\$0.25
	R. R. fare from Wood's Holl to Washington.....	10.10
	To supper on Fall River boat.....	90
	To room on Fall River boat.....	1.00
5.	To breakfast on Fall River boat.....	.40
	To dinner, en route to Washington.....	.75
	To supper in Washington.....	.50
	To transfer of baggage in Washington.....	.50
6.	To breakfast, 30c; dinner, 50c; supper, 50c.....	1.30
7.	breakfast, 25c; dinner, 50c; supper, 50c.....	1.25
8.	breakfast, 25c; dinner, 50c; supper, 50c.....	1.25
9.	breakfast, 30c; dinner, —; supper, 50c.....	.80
10.	breakfast, —; dinner, 50c; supper, 50c.....	1.00
11.	breakfast, 25c; dinner, 50c; supper, 50c.....	1.25
12.	breakfast, 25c; dinner, 35c; supper, —.....	.60
	Room rent in Washington.....	3.00
	Notary fee.....	.25
		25.10

Received at Wood's Holl, Mass., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 8th day of August, 1889, twenty-five dollars ten cents, in full of the above account.

\$25.10.

GEO. E. DAVID.

[Indorsement on back.]

No. 7. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, July 1, 1889; name, Geo. E. David; amount, \$25.10; when paid, August 8, 1889.

Correct.—H. A. Gill, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—W. B. Bayley.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—W. B. Bayley.

Approved.—Richard Rathbun, Acting U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to Fred. W. Camper, Dr.

1889.

Aug. 1.	To recording deed, Doller, assignee, to U. S.....	\$1.00
	recording deed, Revera to U. S.....	.75
	Paid Auditor, transfer on same.....	46
	Postage.....	.04
		2.25

See letter of Att'y General, dated Aug. 31, 1889.

Received at Port Clinton, Ohio, of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 16th day of Sept., 1889, two dollars twenty-five cents, in full of the above account.

\$2.25.

FRED. W. CAMPER,
Recorder.

[Indorsement on back.]

No. 8. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, Aug. 1, 1889; name, Fred. W. Camper; amount, \$2.25; when paid, Sept. 16, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to Wyckoff, Seamans & Benedict, Le Droit Building, Dr.

Sept. 12, 1889, to copying and lithographing 20 copies of specifications for fish hatchery, Put-in-Bay, Lake Erie..... \$28.95

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 21st day of September, 1889, twenty-eight dollars ninety-five cents, in full of the above account.

\$28.95.

WYCKOFF, SEAMANS & BENEDICT.
By J. R. BUCKELEW, *Atty.*

[Indorsement on back.]

No. 9. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, Sept. 12, 1889; name, Wyckoff, Seamans & Benedict; amount, \$28.95; when paid, Sept. 21, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Herbert A. Gill.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to Geo. F. Prescott, Dr.

Oct. 3, 1889, to advertising call for proposals for construction of fish hatchery building at Put-in-Bay, Lake Erie, in the Cleveland Plaindealer, editions of Sept. 10, 12, 14, 16, 18, 21, 23, 26, 30, and Oct. 3, 1889, 14 lines 10 times..... \$21.70

Received at Cleveland, Ohio, of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 14th day of Oct., 1889, twenty-one dollars, seventy cents, in full of the above account.

\$21.70.

GEO. F. PRESCOTT.

[Indorsement on back.]

No. 10. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, Oct. 3, 1889; name, Geo. F. Prescott; amount, \$21.70; when paid, Oct. 14, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries.—Herbert A. Gill.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to M. McDonald, Dr.

1889.		
Nov. 5.	Fare, Washington to Sandusky.....	\$12.80
5.	Pullman sleeper, Washington to Chicago Junct	3.50
5.	Dinner en route	1.00
5.	Supper, Grafton, W. Va.....	.75
6.	Breakfast, Chicago Junction.....	.75
6.	Pullman porter.....	.25
6.	Transfer to steamer <i>Sandusky</i>	.50
6.	Dinner, Put-in Bay.....	.75
6.	Transfer to hatchery and depot	1.00
6.	Ticket, Sandusky to Washington	12.25
6.	Sleeper, Newark to Washington.....	3.00
7.	Breakfast, Grafton	.75
7.	Dinner, R. R. Buffet.....	1.00
7.	Transfer, Washington	.50
		\$38.80

Witness to payment, November 13, 1889.

A. C. ADDISON.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent U. S. Fish Commission, this 13th day of November, 1889, thirty-eight dollars eighty cents, in full of the above account.

\$38.80.

M. McDONALD.

[Indorsement on back.]

No. 12. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, November 7, 1889; name, M. McDonald; amount, \$38.80; when paid, November 13, 1889.

I hereby certify that the articles mentioned were delivered] [services mentioned were rendered].

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—M. McDonald.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to Valentine Doller, Put-in Bay, Ohio, Dr.

1889.		
Nov. 6.	For use of steam-tug to bring Commissioner McDonald, Henry Douglass, and John Gay from Put-in Bay, to Sandusky, Ohio...	\$10.00

Received at Put-in Bay, Ohio, of Herbert A. Gill, disbursing agent U. S. Fish Commission, this 21st day of November, 1889, ten dollars ——— cents, in full of the above account.

\$10.00.

VALENTINE DOLLER.

[Indorsement on back.]

No. 12. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, November 6, 1889; name, Valentine Doller; amount, \$10.00; when paid, November 21, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the articles mentioned were delivered] [services mentioned were rendered].

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—John Gay.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to W. B. Bayley, P. A. Eng'r, U. S. N., Dr.

To mileage for travel performed in obedience to orders of the U. S. Commissioner of Fish and Fisheries, under the following dates:

1889.

Nov. 19. Washington, D. C., to Sandusky, Ohio, 574 miles, at 8 cts.....	\$45.92
20, 24. Sandusky, Ohio, to Put-in Bay Island and return, 44 miles, at 8 cts.	3.52
24. Sandusky, Ohio, to Washington, D. C., 574 miles, at 8 cts.....	45.92
	95.36

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 27th day of November, 1889, ninety-five dollars thirty-six cents, in full of the above account.

\$95.36.

W. B. BAYLEY,
P. A. Eng'r, U. S. N.

[Indorsement on back.]

No. 13. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, Nov. 24, 1889; name, W. B. Bayley, P. A. Eng., U. S. N.; amount, \$95.36; when paid, Nov. 27, 1889.

Correct.—A. C. Addison.

I hereby certify that the articles mentioned were delivered] [services mentioned were rendered].—W. B. Bayley.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—W. B. Bayley.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to Boston and Albany R. R. Co., Dr.

Nov. 4, 1889. To transportation furnished Geo. E. David from Boston, Mass., to Sandusky, Ohio, B. No. 748.....	\$15.30
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Received at Boston, Mass., of Herbert A. Gill, disbursing agent of the U. S. Fish Commission, this 11th day of December, 1889, fifteen dollars thirty cents, in full of the above account.

\$15.30.

BOSTON & ALBANY R. R. CO.,
By C. E. STEVENS, *Treas.*

[Indorsement on back.]

No. 14. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, Nov. 4, 1889; name, Boston and Albany R. R. Co.; amount, \$15.30; when paid, December 11, 1889.

Correct.—A. C. Addison.

I hereby certify that the articles mentioned were delivered] [services mentioned were rendered].

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Herbert A. Gill.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to George E. Gascoyne, Dr.

1889.

Dec. 2. To payment on account of construction of fish hatchery at Put-in Bay, Ohio, as per contract dated October 25, 1889, and in accordance with certificate and recommendation of superintendent of construction, herewith..... \$1,000.00
 Less 20 per cent 200.00
 800.00

Contract filed in office of First Comptroller, October 29, 1889.

Received at Put-in Bay, Ohio, of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 11th day of December, 1889, eight hundred dollars ——— cents, in full of the above account.

\$800.00.

GEO. E. GASCOYNE.

[Indorsement on back.]

No. 15. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, December 2, 1889; name, George E. Gascoyne; amount, \$800.00; when paid, December 11, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the articles mentioned were delivered] [services mentioned were rendered].

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to S. C. Brown, Dr.

Dec. 5, 1889. To 200 Universal hatching jars, complete, \$5.00 each..... \$1,000.00

Equipment, fish hatchery, Put-in Bay, Ohio.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 12th day of Dec., 1889, one thousand dollars, in full of the above account.

\$1,000.00.

S. C. BROWN.

[Indorsement on back.]

No. 16. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, Dec. 5, 1889; name, S. C. Brown; amount, \$1,000.00; when paid, Dec. 12, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—P. T. Yeatman, act'g supt., Cent. Sta., U. S. F. C.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—P. T. Yeatman, act'g supt., Cent. Sta., U. S. F. C.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to Geo. E. David, Dr.

1889.		
Nov.	4. Transfer of baggage in Wood's Holl.....	\$0.25
	4. R. R. ticket, Wood's Holl to Boston.....	1.75
	4. Transfer of baggage in Boston.....	.25
	4. Berth in sleeper, Boston to Buffalo.....	2.50
	4. Dinner in Boston, Mass.....	.75
	4. Supper in Springfield, Mass.....	.50
	5. Breakfast in Dunkirk, N. Y.....	1.00
	5. Dinner in Sandusky, Ohio.....	.75
	5. Transfer of baggage in Sandusky.....	.25
	5. Fare from Sandusky to Put-in Bay.....	.50
	5. Supper and lodging, Put-in Bay.....	.75
	6. Transfer of baggage, Put-in Bay.....	.25
	30. To twenty-five days' board, from Nov. 6th to Nov. 30th, inclusive, \$1.....	25.00
	Notary fee.....	.40
		34.90

Received at Put-in Bay, Ohio, of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 7 day of Jan'y, 1890, thirty-four dollars ninety cents, in full of the above account.

\$34.90.

GEO. E. DAVID.

[Indorsement on back.]

No. 17. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, Nov. 30, 1890; name, Geo. E. David; amount, \$34.90; when paid, Jan. 7, 1890.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to Geo. E. David, Dr.

Dec. 31, 1889.	To one month's board for the month ending Dec. 31st, 1889, at one dollar per day.....	\$31.00
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Received at Put-in Bay, Ohio, of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 16th day of January, 1890, thirty-one dollars ——— cents, in full of the above account.

\$31.00.

GEO. E. DAVID.

[Indorsement on back.]

No. 18. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, Dec. 31, 1889; name, Geo. E. David; amount, \$31.00; when paid, Jan. 16, 1890.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—Geo. E. David.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Geo. E. David.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to Geo. E. Gascoyne, Dr.

1889.

Dec. 31. To labor and material furnished on the fish hatchery at Put-in Bay for the month ending Dec. 31st, 1889, as per contract.....	\$2,000.00
Less 20 per cent.....	400.00
	1,600.00
Amount of contract.....	9,977.24
Payment Dec. 11, 1889.....	\$800.00
Present payment.....	1,600.00
	2,400.00
Balance.....	7,577.24

Received at Put-in Bay, Ohio, of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 23d day of January, 1890, sixteen hundred dollars ——— cents, in full of the above account.

\$1,600.00.

GEORGE E. GASCOYNE.

[Indorsement on back.]

No. 19. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, Dec. 31, 1889; name, George E. Gascoyne; amount, \$1,600.00; when paid, Jan. 23, 1890.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to Geo. E. Gascoyne, Dr.

1890.

Jan. 25. To labor and material furnished on fish hatchery at Put-in Bay, up to date, Jan. 23rd, 1890, as per contract	\$1,000.00
Less 20 per cent	200.00
	800.00
Amount of contract	9,977.24
Payment Dec. 11, 1889.....	\$800.00
Payment Jan. 23, 1890.....	1,600.00
Present payment.....	800.00
	3,200.00
	6,777.24

Received at Put-in Bay, Ohio, of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 8th day of February, 1890, eight hundred dollars ——— cents, in full of the above account.

\$800.00.

GEORGE E. GASCOYNE.

[Indorsement on back.]

No. 20. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, Jan'y 23, 1890; name, George E. Gascoyne; amount, \$800.00; when paid, Feb. 8, 1890.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to Mrs. J. S. Gibbens, Dr.

Jan. 27, 1890. To twenty-six and $\frac{1}{4}$ days' board of Geo. E. David, supt. of const'n, fish hatchery, Put-in Bay Ohio, from breakfast, Jan. 1, "to B. on 27," '90, at \$1.00..... \$26.25

Received at Put-in Bay, Ohio, of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 8th day of February, 1890, twenty-six dollars twenty-five cents, in full of the above account.

\$26.25.

Mrs. J. S. GIBBENS.

[Indorsement on back.]

No. 21. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, Jan. 27, 1890, name, Mrs. J. S. Gibbens; amount, \$26.25; when paid, Feb. 8, 1890.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—Geo. E. David.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Geo. E. David.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to Geo. E. David, Dr.

1890.

Jan. 27. Fare from Put-in Bay, Ohio, to Sandusky	\$.75
27. Fare from Sandusky to Boston	16. 80
27. Dinner in Sandusky	. 75
27. Transfer of baggage in Sandusky	. 25
27. Supper in Sandusky	. 50
27. Sleeping-berth, Cleveland to Syracuse	2. 00
28. Breakfast in Syracuse	. 75
28. Dinner in Albany	. 75
29. Supper, room, and breakfast in Boston	2. 00
29. Transfer of baggage in Boston	. 25
29. Fare to Wood's Holl	1 75
Transfer of baggage in Wood's Holl	. 25
Notary fee	. 25
	27. 05

Received at Wood's Holl, Mass., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 8th day of February, 1890, twenty-seven dollars five cents, in full of the above account.

\$27.05.

GEO. E. DAVID.

[Indorsement on back.]

No. 22. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, January 29, 1890; name, Geo. E. David; amount, \$27.05; when paid, Feb. 8, 1890.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—Geo. E. David.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—John Maxwell.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to W. B. Bayley, P. A. Eng'r U. S. N., Dr.

To mileage performed in obedience to orders from the U. S. Commissioner of Fish and Fisheries, Put-in Bay station:

1890.

Feb. 18. Washington, D. C., to Toledo, Ohio, 608 miles, at 8 cents.....	\$48.64
20. Toledo, Ohio, to Washington, D. C., 608 miles, at 8 cents.....	48.64
	97.28

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 25th day of February, 1890, ninety-seven dollars twenty-eight cents, in full of the above account.

\$97.28.

W. B. BAYLEY,
P. A. Eng'r, U. S. N.

[Indorsement on back.]

No. 23. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, Feb. 20, 1890; name, W. B. Bayley, P. A. engr., U. S. N.; amount, \$97.28; when paid, Feb. 25, 1890.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—W. B. Bayley.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—W. B. Bayley.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to Detroit Free Press Co., Dr.

1889.

May 29. To advertising call for proposals for construction of fish hatchery building at Put-in Bay, Lake Erie, in the "Detroit Free Press;" editions of May 21, 22, 24, 25, 27, 29, '89—11 lines, 6 times.....	\$5.28
Oct. 3. To re-advertisement; editions of Sept. 10, 12, 14, 16, 18, 21, 23, 26, 30, and Oct. 3, 1889	10.40
	15.68

Received at Detroit, Mich., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 25th day of February, 1890, fifteen dollars sixty-eight cents, in full of the above account.

\$15.68.

DETROIT FREE PRESS CO.,
F. FAYRAM, Secy. and Treas.

[Indorsement on back.]

No. 24. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, Oct. 3, 1889, name, Detroit Free Press Co.; amount, \$15.68; when paid, Feb. 25, 1890.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—A. C. Addison.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Herbert A. Gill.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to Detroit Free Press Co., Dr.

1890.

Feb. 1. To advertising call for proposals for erecting a steam and water distributing plant at Fish Commission station at Put-in Bay, Lake Erie, in the "Detroit Free Press," editions of Jan. 7, 9, 11, 13, 17, 20, 22, 24, 28, and Feb. 1, 1890. 16 lines, 10 times \$12.80
 Less disallowance, 1 line80
 15 lines allowed 12.00

Received at Detroit, Mich., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 25th day of February, 1890, twelve dollars ——— cents, in full of the above account.

\$12.00.

DETROIT FREE PRESS CO.,
 F. FAYRAM, *Secy. and Treas.*

[Indorsement on back.]

No. 25, U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, Feb. 1, 1890; name, Detroit Free Press Co.; amount \$12.00; when paid, Feb. 25, 1890.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—A. C. Addison.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Herbert A. Gill.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to Geo. F. Prescott, Dr.

Feb. 1, 1890. To advertising call for proposals for erection of steam and water distributing plant in U. S. fish hatchery, Put-in Bay, Lake Erie, in the Cleveland Plaindealer, editions of January 7, 9, 11, 13, 17, 20, 22, 24, 28, and February 1, 1890, 16 lines, ten times \$24.80

Received at Cleveland, Ohio, of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 8th day of March, 1890, twenty-four dollars eighty cents, in full of the above account.

\$24.80.

GEO. F. PRESCOTT.

[Indorsement on back.]

No. 26. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, February 1, 1890; name, Geo. F. Prescott; amount, \$24.80; when paid, March 8, 1890.

Correct.—H. A. Gill, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—M. L. Nicholson.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Herbert A. Gill.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to Geo. E. David, Dr.

1890.		
Apr. 1.	Transfer of baggage in Wood's Holl.....	\$0. 25
1.	Fare to New York from Wood's Holl.....	3. 35
1.	Supper, en route (on boat).....	. 50
1.	State-room on str. <i>Providence</i>	1. 00
2.	Breakfast in New York.....	. 50
2.	Transfer baggage in New York.....	. 40
2.	Fare, New York to Philad'a.....	2. 50
7.	Dinner in Philad'a.....	. 75
7.	Fare, Philad'a to Sandusky.....	13. 30
7.	Supper, en route (Altoona).....	. 75
7.	Sleeping berth, Pittsburgh to Cleveland.....	1. 50
7.	Breakfast in Cleveland.....	. 50
7.	Transfer baggage in Sandusky.....	. 25
7.	Dinner in Sandusky.....	. 50
7.	Fare, Sandusky to Put-in Bay.....	. 50
	Notary fee.....	. 25
		26. 80

Received at Put-in Bay, Ohio, of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 21st day of April, 1890, twenty-six dollars eighty cents, in full of the above account.

\$26.80.

GEO. E. DAVID.

[Indorsement on back.]

No. 27. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, April 7, 1890; name, Geo. E. David; amount, \$26.80; when paid, April 21, 1890.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—Geo. E. David.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to Geo. E. Gascoyne, Dr.

1890.		
Apr. 30.	To labor and material furnished on the fish hatchery at Put-in Bay, Ohio, for the month ending April 30, 1890, as per contract.....	\$4, 000. 00
	Less 20 per cent.....	800. 00
		3, 200. 00
	Amount of contract.....	9, 977. 24
	Payment Dec. 11, 1889.....	\$800
	Payment Jan. 23, 1890.....	1, 600
	Payment Feb. 8, 1890.....	800
	Present payment.....	3, 200
		6, 400. 00
		3, 577. 24

Received at Put-in Bay, Ohio, of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 6th day of May, 1890, thirty-two hundred dollars, in full of the above account.

\$3,200.00,

GEORGE E. GASCOYNE.

[Indorsement on back.]

No. 28. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, April 30, 1890; name, Geo. E. Gascoyne; amount, \$3,200.00; when paid, May 6, 1890.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—Geo. E. David.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to Mrs. G. F. Schmidt, Dr.

Apr. 30, 1890. To board of Geo. E. David, superintendent of construction of fish hatchery, Put-in Bay, Ohio, from April 9 to 30, inclusive; twenty-two days, one dollar per day \$22.00

Received at Put-in Bay, Ohio, of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 6th day of May, 1890, twenty-two dollars ——— cents, in full of the above account.

\$22.00

MRS. G. F. SCHMIDT.

[Indorsement on back.]

No. 29. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, April 30, 1890; name, G. F. Schmidt; amount, \$22.00; when paid, May 6, 1890.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—Geo. E. David.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated in their immediate delivery or performance.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to M. T. Davidson, 53 Keap st., Dr.

Apr. 29, 1890. To amount paid for freight from Brooklyn, N. Y., to Put-in Bay, on ten packages of steam-pumps and fittings, as per accompanying receipts..... \$39.07

Received at Brooklyn, N. Y., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 9 day of May, 1890, thirty-nine dollars seven cents, in full of the above account.

\$39.07.

M. T. DAVIDSON.

[Indorsement on back.]

No. 30. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, April 29, 1890; name, M. T. Davidson; amount, \$39.07; when paid, May 9, 1890.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—W. B. Bayley.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—W. B. Bayley.

Approved.—M. McDonald, U. S. Commissioner Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to M. T. Davidson, 43 and 53 Keap st., Dr.

1890.

Apr 19. To 2 No. 8 pressure-pumps, finished and lagged, hydraulic-piston and formet-suction air-chamber, and sight-feed lubricators	\$960.00
1 No. 2 pressure-pump for hot water	120.00
	1,082.00

Steam and water dist. plant, Put-in Bay, Ohio, Lake Erie.

Received at Brooklyn, N. Y., of Herbert A. Gill, disbursing agent U. S. Fish Commission, this 14th day of May, 1890, ten hundred and eighty dollars — cents, in full of the above account.

\$1,080.00.

M. T. DAVIDSON.

[Indorsement on back.]

No. 31. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, April 19, 1890; name, M. T. Davidson; amount, \$1,080.00; when paid, May 14, 1890.

Correct.—A. C. Addison, examiner.

I hereby certify that the articles mentioned were delivered] [services mentioned were rendered].—W. B. Bayley.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—W. B. Bayley.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to W. B. Bayley, P. A. Engr., U. S. N., Dr.

To mileage for travel performed in obedience to orders from the U. S. Commissioner of Fish and Fisheries:

1890.

May 27. Washington, D. C., to Dayton, Ohio, 558 miles, at 8 cts.	\$44.64
May 30. Dayton, Ohio, to Washington, D. C., 558 miles, at 8 cts.	44.64
	89.28

Inspection of boilers for Lake Erie station.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent U. S. Fish Commission, this 31st day of May, 1890, eighty-nine dollars and twenty-eight cents, in full of the above account.

\$89.28.

W. B. BAYLEY,
P. A. Engr., U. S. N.

[Indorsement on back.]

No. 32. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, May 30, 1890; name, W. B. Bayley, P. A. Engr., U. S. N.; amount, \$89.28; when paid, May 31, 1890.

Correct.—A. C. Addison, examiner.

I hereby certify that the articles mentioned were delivered] [services mentioned were rendered].—W. B. Bayley.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—W. B. Bayley.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to Mrs. G. F. Schmidt, Dr.

May 31, 1890. To board of Geo. E. David, supt. construction of fish hatchery,
Put-in Bay, Ohio, from May 1st to May 31st, inclusive—one
dollar per day \$31.00

Received at Put-in Bay, Ohio, of Herbert A. Gill, disbursing agent, U. S. Fish Com-
mission, this 6th day of June, 1890, thirty-one dollars ——— cents, in full of the above
account.

\$31.00.

MRS. G. F. SCHMIDT.

[Indorsement on back.]

No. 33. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of
account, May 31st, 1890; name, G. F. Schmidt; amount, \$31.00; when paid, June 6,
1890.

Correct.—A. C. Addison, examiner.

I hereby certify that the articles mentioned were delivered] [services mentioned
were rendered].—Geo. E. David.

The charges in this bill are just and reasonable, and the articles or services were
required by the United States Commission of Fish and Fisheries, and the public exi-
gency necessitated their immediate delivery or performance.—W. B. Bayley.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to Geo. E. Gascoyne, Dr.

1890.

June 3. To amount due for masonry, excavation, etc., at the U. S. fish hatchery,
Lake Erie, as per accompanying certificate of Geo. E. David, superin-
tendent of construction.

Masonry, 1,242 $\frac{3}{4}$ cubic feet at 11 $\frac{1}{2}$ cents.....	\$142.91
Rock excavation, 146 $\frac{1}{2}$ cubic yds., at \$6.00	876.22
Earth excavation, 204 $\frac{1}{2}$ cubic yards, at 70 cents.....	143.15
Widening wharf	140.00
Changing ceiling of engine-room	50.00

1,352.28

Less 20 per cent. to be retained till final completion and delivery
of building

270.46

1,081.82

Received at Put-in Bay, Ohio, of Herbert A. Gill, disbursing agent U. S. Fish Com-
mission, this 12th day of June, 1890, ten hundred eighty-one dollars eighty-two cents,
in full of the above account.

\$1,081.82.

GEORGE E. GASCOYNE.

[Indorsement on back.]

No. 34. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date
of account, June 3, 1890; name, George E. Gascoyne; amount, \$1,081.82; when paid,
June 12, 1890.

Correct.—A. C. Addison, examiner.

I hereby certify that the articles mentioned were delivered] [services mentioned
were rendered].—Geo. E. David.

The charges in this bill are just and reasonable, and the articles or services were
required by the United States Commission of Fish and Fisheries, and the public exi-
gency necessitated their immediate delivery or performance.—W. B. Bayley.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE ERIE.

The United States to Geo. E. Gascoyne, Dr.

1890.		
July 1.	For material furnished and labor performed on the fish hatchery at Put-in Bay, Ohio, in accordance with his contract of October 25, 1889	\$1,900.00
	Less 20 per cent	380.00
		1,520.00
	Amount of contract	9,977.24
	Payment Dec. 11, 1889	\$800
	Payment Jan. 23, 1890	1,600
	Payment Feb. 8, 1890	800
	Payment May 6, 1890	3,200
	Present payment	1,520
		7,920.00
		2,057.24

Received at Put-in Bay, Ohio, of Herbert A. Gill, disbursing agent U. S. Fish Commission, this 16th day of July, 1890, fifteen hundred and twenty dollars — cents, in full of the above account.

\$1,520.00.

GEORGE E. GASCOYNE.

[Indorsement on back.]

No. 35. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Erie. Date of account, July 1st, 1890; name, Geo. E. Gascoyne; amount, \$1,520.00; when paid, July 16, 1890.

Correct.—H. A. Gill, examiner.

I hereby certify that the articles mentioned were delivered] [services mentioned were rendered].—Geo. E. David.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and in accordance with contract, and approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ADVERTISEMENT, INSTRUCTIONS FOR BIDDERS AND SPECIFICATIONS FOR BUILDING A FISH HATCHERY, ETC., FOR THE UNITED STATES FISH COMMISSION AT PUT-IN BAY, LAKE ERIE.

Advertisement.—Proposals for building fish hatchery, etc.

OFFICE U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., Sept., 6, 1889.

Sealed proposals for the construction of a fish hatchery at Put-in Bay, Lake Erie, will be received at this office up to 12 o'clock, noon, of October 10, 1889, when they will be opened in the presence of attending bidders. Specifications, plans, forms of proposals, etc., can be seen at the offices of Henry Douglass, State Fish Hatchery, Sandusky, Ohio; George D. Mussey, Secretary State Fish Commission, Detroit, Michigan, and Edward E. Schwabe, Beckman building, 204 Superior street, Cleveland.

MARSHALL McDONALD,
Commissioner.

Instructions for bidders.

(1) The proposed building is to be constructed on a U. S. Government reservation at Put-in Bay, Lake Erie.

(2) Each copy of proposal must be accompanied by a guaranty executed by two sufficient and responsible guarantors, in accordance with and on the forms prescribed. The guarantors must jointly justify in the sum of one thousand five hundred dollars (\$1,500.00). A proposal unaccompanied by such guaranty will not be considered.

(3) The affidavits of justification on the back of the bidders guaranty must be taken before some official or person authorized by the laws of the United States, State or Territory to administer oaths.

(4) The certificate following the justification is to be given under seal, if any, by some *civil official* of the *United States*.

(5) Each signature of bidders and guarantors shall have attached a seal of wax or wafer, and shall be attested by at least one witness for each signature, which must be written in full.

The residence of each signer must be given, with number, street, city or town, and State.

(6) No person who, as a contractor, has failed to satisfactorily perform any contract with the United States, or as a surety has failed to abide by a bond for the performance of any contract or a guaranty with a proposal, will be accepted as guarantor.

(7) A firm will not be accepted as guarantor, nor a partner for a copartner, or for a firm of which he is a member.

An officer of a corporation will not be accepted as guarantor for such corporation.

(8) All blanks in the forms of proposals and guaranty must be filled, prices must be written in words as well as expressed in figures.

(9) Additional copies of this form will be furnished on application.

(10) Alterations by erasure or interlineations must be explained or noted in the proposal over the signature of the bids.

(11) When firms bid, the individual names of the members of the firm should be written out and signed in full; but the signers may, if they choose, describe themselves in addition as doing business under a given name and style as a firm.

(12) Reasonable grounds for supposing that any bidder is interested in more than one bid for the same item will cause the rejection of all bids in which he is interested.

(13) The United States reserves the right to reject any and all bids, or parts of bids; also to disregard the bid of any failing contractor or bidder known as such to the United States.

(14) The bidder must satisfy the United States of his ability to furnish the materials and to perform the work for which he bids. Lack of evidence as to ability to furnish plant, materials, and to properly construct the proposed building will be sufficient cause for the rejection of any bid.

(15) Within five (5) days after he has been notified of the acceptance of his bid, the successful bidder will be required to enter into a written contract with the United States, accompanied by a bond for the same amount as the total sum of the bidder's offer for the entire work, executed by the bidder as principal and two sufficient and responsible persons as bondsmen.

Each bondsman will be required to qualify in the full amount of the bond.

(16) Payment on account of contracts can only be made to principals. Assignments and powers of attorney to collect moneys from the United States are not recognized.

(17) Transfers of contracts, or of interests in contracts, are prohibited by law.

(18) One copy each of the advertisement, instructions for bidders, and specifications must be attached to each proposal and be considered a part of it.

(19) Bidders are expected to familiarize themselves with the location of the proposed building, and to make their own estimate of the facilities and difficulties attending its construction. Claims for extra compensation based upon the contractor's ignorance on the above points will not be considered.

(20) The proposal and guaranties must be placed in an envelope, sealed and marked "Proposal for fish hatchery at Put-in Bay, Lake Erie," and inclosed in another envelope, addressed to "Marshall McDonald, U. S. Commissioner of Fish and Fisheries, Washington, D. C."

(21) No proposals can be received by telegraph, and none will be received after the time stated in the advertisement.

Specification of materials to be provided and work to be done for and in the construction of a fish hatchery for the U. S. Fish Commission at Put-in Bay, Lake Erie.

ART. 1. The whole is to be done in accordance with these specifications and accompanying plans, prepared by the Architect of the U. S. Fish Commission, and no deviation therefrom will be permitted unless authority in writing shall be first obtained from the authorized agent of the U. S. Fish Commission. Any change of plans, etc., involving any difference in cost from that prepared by the original contract must be agreed upon by the parties to this contract, and state in writing the difference in price from that originally agreed upon.

ART. 2. Should it be deemed desirable during the construction of the proposed building to make any additions to, or to do any extra work not contemplated or provided for by these plans and specifications, an agreement in writing stating the nature and cost of such addition or extra work to be entered into between the U. S. Commissioner of Fish and Fisheries and the contractor, before such work is commenced. No claim for extra work or materials, excepting as above specified, will be considered.

ART. 3. The work will be under the direction of the architect or other agent of the U. S. Fish Commission, and all materials and workmanship must be satisfactory to him before payment therefor will be made.

ART. 4. In case any misunderstanding should arise between the agent of the Government in charge and the contractor as to the meaning or intention of any portion of these plans and specifications, the decision of the U. S. Commissioner of Fish and Fisheries upon said disputed point or points will be considered correct, and will be final.

ART. 5. The United States will not be liable for any injury occurring to the contractor's employees or plant, or loss occurring to the contractor or damage to the building caused in any manner before the final completion and acceptance of the building.

ART. 6. The work to be commenced within fifteen (15) days after the signing of the contract, and it is to be carried forward until bad weather sets in, when the work will be stopped and not resumed until spring. The building to be completed and ready for occupancy, according to the terms of the specifications, by the 15th day of June, 1890.

ART. 7. No extension of time, for whatever cause, for the completion of the contract for this work shall be asked for or granted, except under the implied and understood condition that the contractor shall be charged with, and shall pay to the United States, the sum of fifteen dollars (\$15.00) per day for each and every day that the building is not completed and ready for occupancy after the time specified. Said penalty shall be deducted from any amounts due the contractor on account of this work at the discretion of the U. S. Commissioner of Fish and Fisheries.

ART. 8. Any failure to commence work within the specified time, or to prosecute it thereafter at the rate and in the manner required, will be considered as allowing the United States to await the contract and declare a forfeiture of all reserved percentages and other dues, or as allowing the United States, at the option of the U. S. Commissioner of Fish and Fisheries, to carry on the work, at the expense of the contractor, and as rendering him and his bondsman liable for any increase of cost over that proposed and agreed upon.

ART. 9. In case the lowest price be named by two or more bidders these bidders must agree between themselves within twenty-four (24) hours after notification as to who shall have the award. If the question be not thus settled within the time stated and the Commissioner of Fish and Fisheries so informed, he may select either of them to do the work at his discretion at said price.

ART. 10. Payment for the work done will be made after the end of each month when the progress and character of the work are satisfactory, but not otherwise.

ART. 11. Twenty per centum of the amount due will be retained until the final completion and acceptance of the work by the U. S. Commissioner of Fish and Fisheries. Within thirty days thereafter final payment for the work will be made.

ART. 12. The "instructions for bidders," as far as they may be applicable, are to be considered essential parts of these specifications.

ART. 13. The tools, scaffolding, etc., used by the contractor must be suitable for the work and satisfactory to the agent in charge.

ART. 14. The contractor shall furnish all necessary plant, materials, and labor. He shall allow the agent of the Fish Commission in charge of the work full access to all parts of the work at all times, and shall give the agent any assistance which he may need.

ART. 15. All materials furnished for the work must be first-class of their kind, and satisfactory to the agent in charge; any materials not satisfactory will be condemned and must be removed from the location of the work, and be not again brought upon the ground.

ART. 16. All workmanship must be neat and first-class, and any work not so must be corrected immediately upon the request of the agent in charge.

ART. 17. The contractor must give his personal superintendence to the work during its progress and see that the building is constructed in the most careful manner, and according to the true intent and meaning of the drawings and these specifications, all of which are attached to the contract, and form a part thereof.

ART. 18. All lumber and timber used to be free from sap, to be well seasoned, of the qualities hereinafter mentioned, and of white pine.

ART. 19. The building will be erected under the supervision and to the entire satisfaction of such person or persons as may be designated by the Government. No advantage may be taken of any omission in these specifications or accompanying draw-

ings, as full explanations and detail drawings will be given to the contractor for any part of the work not sufficiently understood.

FOUNDATIONS.

ART. 20. The foundation walls to be built as shown in plans, to be eighteen (18) inches in thickness, and of necessary height, which is to be hereafter determined. The walls are to be of rubble masonry, the stones as large as can be used to advantage, and to be laid, where underground, in best quality hydraulic cement mortar, and above ground in mortar composed of half hydraulic cement mortar and half lime mortar. The stones must be well bedded and bonded together, and all joints filled solid with mortar and thoroughly slushed and chinked.

ART. 21. Build the piers and foundations for posts in hatchery and engine-room where shown in plan. The walls and piers to have a footing-course two feet in width. The faces of the walls are to be smooth enough to present a good appearance, and the joints are to be well filled and neatly pointed up.

ART. 22. The amount of stone-work which will be required is not exactly known, and bidders will state the price per cubic foot for which they will build it as per specifications. Measurement of the quantity of masonry actually laid will only be allowed.

ART. 23. The excavations for walls and trenches to be made as directed by the agent in charge, and payment will be made by the cubic yard for the amount removed.

ART. 24. The excavated material to be deposited where directed by the agent in charge, and payment will be made by the cubic yard for the amount removed.

ART. 25. A brick trench to contain the main suction pipes for engine-room, and 8-inch terra cotta sewer pipe will be built in center of hatchery, 3 feet wide by $2\frac{1}{2}$ feet deep, extending from a point 6 feet inside of engine-room across the hatchery and under office.

ART. 26. The sides and bottom of trench to be of brick, the side walls to be 9 inches thick and bottom of trench to be one brick thick, well bedded in cement. The sides and bottom to be laid in cement mortar. The ends of the trench are not to be bricked up. Cast-iron corrugated covering-plates are to be provided and set over this trench the entire length, with the exception of the part under office, these plates to be 2 feet wide by 3 feet 6 inches long, $\frac{1}{2}$ -inch thick, with two ribs $\frac{1}{2}$ -inch thick running lengthwise, the ribs to be $1\frac{1}{2}$ inches deep in center, and to feather out at ends so as to leave 3-inch bearing-surface for plates on each end of ribs. On top of the brick walls of trench in hatching room and engine-room will be placed a stringer of 4" x 6" hard pine, these stringers to have a piece $\frac{1}{2}$ " x 3" cut out of them, as shown on drawing to let the ends of iron covering plates of trench fit neatly into them. These stringers to be firmly bedded in cement on top of brick walls.

FLOOR OF HATCHERY.

ART. 27. The floor of hatchery is to be of asphalt. It consists of 6 inches of hydraulic cement concrete, with a wearing surface of bituminous mastic laid in two coats, respectively $\frac{1}{2}$ and 2 inches thick when compressed. Pine stringers 4" x 6" will be bedded in this floor where shown on plan to serve as foundation for hatching tables. These stringers to be laid true and level; the top face of the ends at the center of hatchery floor to be level with the top dressing of concrete.

ART. 28. The floor will be laid with this asphalt pavement in such a manner that there will be sufficient incline from both ends of the hatchery to the center so as to drain off all water. The center of hatchery to be at least 4 inches higher than ends, and suitable gutters laid at ends to carry off water.

Provide and place in position in a neat and workmanlike manner a brick skirting around hatchery floor of selected smooth hard burnt bricks, one brick in height; the bricks to be set on edge and laid in cement; to be well and evenly laid, so that the base-board will fit close on top of the brick skirting, the bricks to be painted a light Venetian red color.

OFFICE FLOOR.

ART. 29. The floor is to be double, the first to be of ordinary matched flooring, but without large or loose knots or knot holes.

ART. 30. The top floor to be best quality matched flooring of narrow width; between the floors extra heavy sized building paper is to be laid.

FLOORING OF BED-ROOM, TANK-ROOM, AND STORE-ROOM.

ART. 31. These rooms will have double flooring, the lower flooring to be of good hemlock boards, not over four inches wide, matched, planed on one side to an even

thickness, and blind-nailed; the upper flooring will be of first quality rift hard pine, $1\frac{1}{2}$ inches thick, not over 4 inches wide, matched and blind-nailed. The flooring of water closets on first floor will be made same as office.

FLOOR OF ENGINE-ROOM.

ART. 32. The floor will be laid with smooth hard burnt brick culled, laid in 2 inches of mortar.

COAL-SHED.

ART. 33. The coal-shed will not be finished off on the inside; the floor joists to be three inches by twelve inches placed sixteen inches apart on centers and to be covered with ordinary matched flooring without large or loose knots or knot-holes, the floor to be well nailed and closely laid.

BRICK-WORK.

ART. 34. All the brick used in the building, except for fire-place and hearth, to be of best hard common brick, to be carefully culled for the facing of chimneys above roof, and all to be new, well shaped, and of uniform size. All to be laid wet except in freezing weather, with joints thoroughly flushed up with mortar, and all well bonded. All brick-work to be afterwards plastered is to have rough joints, other work to have the joints neatly struck, and all work visible outside of the house to be washed down after completion with muriatic acid.

ART. 35. Build the chimneys as shown on the drawing of hard brick in mortar made with one part cement to two parts lime, to underside of roof boarding; above roof to be of selected brick, formed according to drawing, and laid in mortar made with equal parts of lime and cement, colored with Venetian red to a light red color and the upper course to be laid in clear cement. The brick work of chimneys to be kept in all cases at least one inch clear of any wood-work.

ART. 36. Plaster flues smoothly inside to top, and clean out as completed, and plaster the outside of each chimney from first floor to underside of roof boarding. Build in lead flashings.

ART. 37. Turn 4-inch trimmer arch on centers to fire place in office, to be 2 feet wide by the length of breast, level up with cement, concrete, or brick-work to receive hearths. Build fire-place in office of good selected brick, with hearth of 20 inches width and length as shown, all laid in red mortar and neatly painted. The fire-place to be built in the best manner, with $\frac{1}{2}$ by 2 inch chimney bars, 8 inches longer than the openings, which will be square. Hearth to have oak border.

FRAMING.

ART. 38. Sills: Sills and girders, 6 x 8 inches lapped and pinned at the corners and intersections.

ART. 39. Wall-plates: Wall-plates for all walls 4 x 6 inches, joined together in the same way as described for sills.

ART. 40. Floor joists to be 3 x 12 inches, placed 16 inches on centers.

ART. 41. Ceiling joists and collar beams will be 2 x 8 inches. Porch-joists will be of best well seasoned dry white pine.

ART. 42. All other framing timber to be of good sound pine, free from large knots and shakes.

ART. 43. The house is to be all framed, braced and pinned in the best and strongest manner, and perfectly true and plumb. No wood-work to be placed within 1 inch of the outside of any chimneys and no nails to be driven into any chimney.

ART. 44. Piazza floor to be framed with 6 x 8 inch stuff, which will carry 2 x 8 inch floor joists, 16 inches on centers, with a fall of 1 inch towards front. The finished post of piazza to stand upon the floor, tenon 4 inches long into the girder and the plates to be framed into it and pinned. Under side of piazza roof will be sheathed with seven-eighths inch clear white pine, $2\frac{1}{2}$ inches wide, tongued and grooved and beaded with neat return mouldings. The under side of roof of tank-room to be also sheathed in a similar manner.

ART. 45. Scantling, etc.: Studs of outer walls of main building to be 3 x 6 inches; corner posts, 6 x 6 inches, with 2 x 4 inch pieces spiked on their interior angles; all to be in full lengths. All corner posts, doors, and window studs to be well braced diagonally. Heads to be framed into all window and door openings of the same size as adjacent studding.

ART. 46. Bridging. The floors over office, over center of main building, and over engine room to be bridged as shown, with a straight continuous row of double herring-bone cross-bridging of $1\frac{1}{2}$ x 3 inch pieces, cut in and nailed with two nails at each end of each piece.

ART. 47. There will be a truss roof of 32 feet span to main building.

ART. 48. Eight trusses will be required to be built as shown. They are to be built of good, sound, well-seasoned lumber. The beams to be dressed on the three sides as they show in the hatching-room, and to be chamfered. They must be free from large or decayed knots and present a good appearance.

ART. 49. Brackets are to be provided and placed under each of these trusses as shown on plan. The purlines for the truss roof of the building to be four inches by six inches. All to be securely fastened. The rafters for the other parts of the building to be 2 x 8 inches, 16 inches on centers, notched on the plate and spiked; hip and valley rafters 3 x 10 inches; ridge-pole of main hatchery building to be 4 x 12 inches; and other ridge-pole to be 2 inches by 10 inches.

ART. 50. The collar-beams to be 2 x 8 inches. The corner-posts and every third stud will be fastened to sills and plates by $\frac{1}{4}$ x $1\frac{1}{2}$ -inch iron straps of sufficient lengths, spiked on in the most thorough manner. The large window posts and sills and cap timbers to be 6 x 6 inches, well braced and bolted together. The entire framework to be properly constructed by mortising, notching, and lapping in the most workmanlike manner, by bracing, tying, and spiking all parts together, making the building as firm and strong as possible.

ART. 51. Roofing: Cover all the roofs, including piazza and outbuildings, with good pine boards, planed on one side to an even thickness, and well nailed to every rafter one thickness of pine tarred felt paper, nailing strips and shingle with first quality * * * 18-inch pine shingles, laid $4\frac{1}{2}$ inches to the weather, and nailed with two galvanized nails to each shingle. Form dormers, &c., as shown on drawings. Build wide counter flashings of 4 pound lead into joints of the chimneys; shingle in wide zinc fastenings to turn up against the brick work as high as the counter flashings, will allow; then turn down the counter-flashing, dress close, and cement perfectly tight against the brick-work. Shingle in wide zinc flashings in valleys and around dormers.

ART. 52. Walls: Inclose the walls with good pine boards, put on diagonally, planed one side to an even thickness, each board to be driven up closely and nailed to each stud, with best quality resin-sized water-proof sheathing-paper, held in place by strips of pine 2 inches wide and $\frac{1}{2}$ inch thick, over this the lower story up to belt course is to be covered with tongue and grooved clap-boards; corner boards $1\frac{1}{2}$ inch stuff and 6 inches wide. A base-board water-table is to be put around the building on the first sheathing, twelve inches deep by two inches thick and beveled upper outside edge.

ART. 53. All the upper portion of buildings to be shingled with the best quality of * * * 18-inch sawed pine shingles, laid $5\frac{1}{2}$ inches to the weather, and nailed with two galvanized nails to each shingle.

ART. 54. Where there are no corner boards the shingles will be lapped at the corners.

ART. 55. Put strips of zinc 3 inches wide around all window and door casings throughout, running under casings and clapboards or shingles.

ART. 56. Outside steps: Outside steps to have seven-eighths inch pine risers and $1\frac{1}{4}$ -inch rift hard pine treads with rounded nosings returned at the ends, to be supported on 2-inch by 12-inch spruce strings. Twelve inches on centers, the outer strings to be planed or cased, and the foot of the strings to be notched upon a 4-inch piece, supported by two short red-cedar posts.

ART. 57. Other outside finish: All other outside finish to be of good, thoroughly seasoned white pine, in strict accordance with elevations and drawings, all leaded where necessary to make it water-tight.

ART. 58. Priming: All outside finish must be primed before putting up or immediately afterwards, and all work warped or cracked must be replaced.

INTERIOR FINISH.

ART. 59. Grounds and furrings: Put on grounds for seven-eighths inch plastering on walls of hatchery, walls and ceilings of office portion and walls and ceilings of engine-room and store-room over head. Cross-fur all ceilings in rooms to be plastered with 1-inch by 2-inch strips, 12-inches on centers; set grounds for wainscot 4 feet high in hatchery and 3 feet 4 inches high in office, engine-room, store-room, and bedroom over the office and tank-room. Lath and plaster the above rooms, two coats in the best manner, all studdings, partitions, furrings, and ceilings, carrying the plastering to the floor everywhere. Walls of engine-room to have a rough-cast finish. Laths to be of the best seasoned pine, free from knots, barks, or stains, all laid three-eighths inch apart, and breaking joints every six courses, and over all door and window-heads. The first coat of plaster to be best quality lime and clean sharp sand, well mixed with a half bushel of best long cattle or goat's hair to each cask of lime, thoroughly worked and slacked, at least one week before using in a sheltered place. All to be well trowelled, straightened with a straight edge, and made perfectly true, and brought well up to the ground.

ART. 60. The skim coat to be of the best quality lime, slacked at least one week before using, and washed beached sand, and well floated.

ART. 61. Point up with lime and hair mortar around outside door and window-frames; clear away and remove all rubbish from the premises after the second coat of plaster is on; clean the mortar off of the floors and sweep out the building and leave all ready for the wood finish. Patch up and repair all the plastering at the completion of the building and leave all perfect. The walls of office, bed-room, hatchery, and store-room to be tinted with a light drab color.

ART. 62. Ceiling of hatching room: The hatching room will be ceiled with narrow (not over 4 inches wide) beaded seven-eighths inch wainscot stuff. The ceiling to be divided into squares between the trusses by flat moulding. Between the trusses at the sides and ends of the hatching room there will be a board fitted finished with $1\frac{1}{2}$ inch molding at top and bottom.

ART. 63. The uprights for support of tanks on second floor to be finished on four sides and horizontal beams also finished. The uprights and horizontal pieces to be chamfered.

ART. 64. The girders under tank-room to be finished on three sides showing from hatchway room and edges chamfered. The ceiling under tank-room will be ceiled the same as the truss-roof. On each side of tank-room floor looking down into hatchery there will be a neat railing 4 feet high. There will be a board fitted against the ends of flooring and joists of tank-room floor showing from hatchery, to be finished and have $1\frac{1}{2}$ inch return moulding at top and bottom ends. The post and girder in engine-room will be finished and have edges chamfered.

ART. 65. Base-boards: The base-boards will be seven-eighths inch thick, with moulding on top; to be 8 inches high in first story.

SCUTTLE.

ART. 66. Make scuttle in south slope of roof of hatchery building, over tank-room, 18 x 24 inches. Combing to be 3 inches high and covered with tin and double flashed. Scuttle to be tin covered. All tin painted two coats of paint on top and one coat underside before placing in position. A suitable ladder is to be provided of sufficient length to reach from floor of tank-room to scuttle-hole.

DOORS.

ART. 67. All doors to be of clear pine, well made, and of size specified.

ART. 68. The outside engine-room door to be double, made of two-inch plank, with diagonal matched and beaded sheathing, set in a rebated plank frame 2 inches thick. Each door to be hung on stout strap galvanized hinges. To have good mortise lock with imitation bronze trimmings, and also to be provided with foot and chain bolts and additional inside bolt.

There will be also one outside door to engine-room 4 feet wide, 2 inches thick, and 8 feet high, and to have a movable transom with light of glass 16 inches high; door to have six panels, as shown on plan.

ART. 69. There will be three outside doors to hatchery building, each 4 feet wide, 2 inches thick, and 8 feet high, each door to have a movable transom, with light of glass 16 inches high. These doors to be made as shown on plan, and to each have six panels.

ART. 70. The outside office door to be 2 inches thick, 3 feet 6 inches wide, and 8 feet high, moulded on both sides and to have five panels, a stationary transom to be put over door having light of glass 16 inches high. This light of glass to have neatly lettered on it the word "office" in gold letters shaded black.

ART. 71. The outside doors of office and hatchery building to be hung on figured imitation bronze hinges and have good outside lever locks with night latch, and to have imitation bronze knobs and escutcheons.

ART. 72. The door leading from office to hatchery will be 2 inches thick, 3 feet wide, and 8 feet high; to have five panels as shown on drawing, the upper two panels to be clear glass. The doors to water-closet under front stairway of office and of water-closet leading from engine-room to be each 2 feet 8 inches wide by 6 feet 8 inches high by $1\frac{1}{2}$ inches thick, and to be similar to other first story doors.

ART. 73. There will be a door 3 feet 6 inches wide, 2 inches thick, and 8 feet high leading from engine-room to coal-shed.

ART. 74. There will also be a door 3 feet 6 inches wide, 2 inches thick, and 8 feet high, leading from engine room to hatchery building.

ART. 75. This door to be made similar to the other doors. On second story there will be one door leading from bed-room to tank-room and one door leading from store-room to tank-room; each to be 2 feet 8 inches by $1\frac{1}{2}$ inches thick by 6 feet 8 inches high, to have 4 panels, each moulded. Each door to have a swing top light or transom 10 inches high.

ART. 76. All of the inside doors to be hung on plain black japanned $3\frac{1}{2}$ inches loose joint butts. Mortise locks and black knobs with imitation bronze trimmings.

ART. 77. The door casings of architraves to be 5 inches wide, seven-eighths inch thick, and with beaded face and square blocks with turned rosettes at upper corners. All doors to have hard wood sill four inches thick.

ART. 78. All doors and frames to be well made of clear stock and first-class in all respects. All doors to have good mortise locks, black knobs, and imitation bronze trimmings.

ART. 79. There will be an outside door to coal-shed. This door to be double made of two-inch plank with diagonal matched and beaded sheathing set in a rebated plank frame 2 inches thick. Each door to be hung on stout strap galvanized hinges. To have good mortise lock with imitation bronze trimmings, and also to be provided with foot and chain bolts and additional inside bolt.

ART. 80. The outside doors to engine-room and coal-shed to have stationary transom lights over doors, glass to be 16 inches high.

ART. 81. There will be three slat doors provided and hung in water-closets.

WINDOWS AND WINDOW FRAMES.

ART. 82. Provide and set all windows and frames of the size and shape shown on plans. Glaze all sash in lights as shown on drawings and as directed, with best double thick American sheet-glass, all well bedded, puttied, and sprigged, and all to be left clean, whole, and perfect at completion of building. The window frames to have seven-eighths inch pine pulley stiles, best steel axle capped brass-faced pulleys and best shoe-thread sash line, the beads and pulley stiles to be of hard pine; 2 inch clear pine sashes in lights as shown, with moulded sash bars and counter-checked meeting rails where double. All sash bars to be seven-eighths inch thick. Windows to have boxed frames.

ART. 83. The small window in office building in front under roof will be hinged at bottom so as to open outward, to have strong japanned iron fastenings. Provide all sliding sash with plain bronzed sash locks of approved pattern.

STAIRS.

ART. 84. Provide materials and build the stairs where shown on plans. The stairs will be three feet wide, to have open-string moulded nosing, returned at the ends and carried around well-room; seven-eighths inch risers and 1 and three-eighths inch treads housed into the wall sides; simple balusters and hand-rail; balusters 1 and three-fourths inches square, two to a tread; rail 2 and three-fourths by $3\frac{1}{2}$ inches, balusters and rail carried around well-room, and to finish with half post against the wall. The post at the foot of the stairs to be 6 inches by 6 inches square turned. The strings to be 2 x 12 inches, of pine, 12 inches on centers. All to be thoroughly wedged, blocked, and glued in the best manner and left clean and perfect.

ART. 85. Provide a step-ladder long enough to reach from second story to attic over front of office building.

ART. 86. Provide and set in the office a neat hard wood chimney-piece with mantel worth twenty dollars. The design of which to be first submitted to the commissioner for his approval.

COMBING AND CRESTING.

ART. 87. Provide and set the combing and cresting for ridges and peaks of roof as shown on plans.

FLAG-STAFF.

ART. 88. Provide and set a flag-staff of spruce in front of office building as shown on plan; to be 25 feet long, six inches diameter at heel and three inches at head.

ART. 89. The points of the compass and finials to be of wrought iron and gilded. The flag-staff is to be painted three coats of white lead, and the ball on top of staff to be gilded.

EAVES.

ART. 90. The rafters are all to project 2 feet from the outside sheathing. The eaves to be finished with a moulded ogee wooded gutter of suitable shape and five inches width. Under the eaves to be fitted a neat moulding. Every care must be taken to make the boxing of the eaves neat, tight, and strong.

DOWN-SPOUTS.

ART. 91. Provide and put up proper tin down-spouts $2\frac{1}{2}$ inches diameter with suitable connecting goose-necks 2 inches diameter to the wooden gutters. These down-spouts will be six in number, and two small ones for porch of office one for coal shed.

DRAINS.

ART. 92. Drains: Provide and set in ground six inch terra-cotta drain-pipes as shown on plan, to have close joints and make connections with these drains to the down spouts and make one connection with each of the open drains at each end of hatchery floor to these terra-cotta drain-pipes, by means of a 2-inch cast-iron pipe through the wall.

TANKS.

ART. 94. Provide and place in position, as shown in plans, two cedar tanks; the mean diameter of each to be twelve feet. The height of staves to be 8 feet 6 inches. Under where the tanks are to stand a zinc lining is to be placed of No. 15 gauge; a wrought-iron drain-pipe three-fourths inch diameter is to run from one end of each pan and connect with the overflow pipe. The moulding forming the edges of drip-pan to be $2\frac{1}{2}$ inches high.

ART. 95. The staves to be 2 inches thick and the bottom $2\frac{1}{2}$ inches thick when dressed. Each tank to have six hoops; the three upper to be $2\frac{1}{2}$ inches by one-eighth inch iron and the three lower hoops to be three by three-sixteenths inch iron. To be of the best American wrought iron, with cast-iron lugs riveted on and set up with one three-fourths inch bolt through the lugs. Proper scantling to be provided for the support of the bottom of the tank to keep the staves from resting on the floor.

ART. 96. These tanks are to be made first class in all respects, and will be filled and tested before being accepted. The tanks are to be painted two coats on the outside of pure lead and linseed oil and drab paint.

TANK SUPPORT.

ART. 97. Provide the necessary lumber and build the tank supports, as shown on plans. All the lumber to be selected stock, sound and straight, and free from all defects; all parts of the supports showing in hatchery to be planed and edges chamfered. The frame-work is all to be mortised and tenoned, and fastened with hard wood trenails.

ART. 98. Blinds: Provide and hang inside blinds, to have movable slats to center fold, to the windows in the office and bed-room.

PLUMBING.

ART. 99. The contractor is to provide and lay an 8-inch terra-cotta sewer-pipe in center of main trench; commencing from the inner end of collecting tank and extending out to the outside of middle pier of wharf. From inner end of collecting tank this 8-inch pipe to be reduced to a 4-inch terra-cotta pipe to extend to the boiler room so as to connect with the boiler-blow. The 8-inch terra-cotta pipe to be provided with four 8" x 5" tees (terra cotta) for the purpose of connecting with the tank overflow pipes. These tees to be located as shown on plans.

ART. 100. Provide three of Demorest's Hygeia water-closets, with traps, and set where shown on plans. Fit up the closets under stairs in office with neat cabinet work and wainscot the room. Use enameled iron slop safes for water-closets.

ART. 101. Provide and place in position, one corner urinal under stairs of office, as shown on drawing, and one urinal in water-closet leading from engine-room. A "one-gallon flushing tank to be provided and placed over each water-closet. Each closet to be provided with a nickel-plated chain and pull.

ART. 102. Provide and set a washstand in office, under stairs, as shown on drawing. Silver-plated cocks and plugs, supply $\frac{1}{2}$ inch for water, and to have $1\frac{1}{4}$ -inch lead waste-pipes for basins to run into soil-pipes of water-closets.

ART. 103. Provide and set in engine-room a cast-iron sink, enamel lined, on brackets. To have back, and nickel faucet.

ART. 104. To be Mott's Eastlake pattern, 48" x 23" x 9" deep. Make all the necessary water connections to water-closets, urinals, wash-basin, and sink, from the tanks in the second story. All pipes should be laid with sufficient fall to secure thorough drainage.

ART. 105. Lay extra heavy 4-inch cast-iron soil-pipes, connecting with all water-closets and the 8-inch terra-cotta sewer-pipe at a point under the office. Make all connections of the water-closets, urinals, and sinks to these 4-inch soil-pipes by means of suitable Y's, bends, &c., as shown on plans.

ART. 106. Place $2\frac{1}{2}$ -inch cast-iron ventilating pipes in each of the water-closets. Carry the same through the walls of the building to 16 inches above the roof, and flash and make water-tight around the pipe where it passes through the roof.

PAINTING.

ART. 107. Outside. Oil piazza floors and treads of steps two coats. Paint shingles of roof two coats of dark red roofing paint.

The outside of walls of buildings to be painted two coats of a warm yellow tint, to be mixed of yellow ocher and Venitian red, with a very large proportion of yellow used and a very small proportion of the red. The belts, corner-boards, casings, and trimmings generally, the soffits of eaves, the outside of all outside doors will be painted two coats of dark olive-green. Posts and rails and balusters of piazza will be painted two coats of very dark olive-green.

ART. 108. The outside of all sashes will be painted three coats of very dark olive green. Properly prepare all wood-work for painting and oiling by rubbing down, puttying, etc. All floors, steps, and stairs to be oiled two coats.

ART. 109. All interior wood-work will be finished with three coats of hard oil, and will be rubbed down with oil and pumice-stone after each coat. The stiles of doors to be stained slightly darker than panels, mouldings, of wainscoting, etc.; also chamfered edges of roof trusses, etc., to be stained darker.

WOODEN PIER.

ART. 110. A wooden pier is to be constructed in front of the hatchery building 18 ft. wide and to be built as shown on plan. All of the timber to be sound pine, free from splits, shakes, decay, rotten knots, and all other defects tending to impair durability or strength.

ART. 111. All outside timber to be 8" x 8", ties 6" x 8", running across each other and bolted together. Ties in shore crib well distributed from ends and front. All timbers to be firmly drift-bolted together with seven-eighths inch iron blunt-pointed drift-bolts, the bolts running through three timbers each. The top or cap stringers are to be 6 inches by 12 inches, scarfed and bolted together.

ART. 112. Framing must be done accurately, and care taken in handling not to chip off the edge or split the dove-tails. In framing timber no stick must be cut so as to fall easily in place, but on the contrary, each stick will be required to be mauled into place.

ART. 113. To prevent splitting while bolting timber, plank, and joists must be bored to receive the bolts. Boring for bolting will in no case be allowed of the same diameter as bolts, but always slightly less.

ART. 114. The cribs are to be framed and built as shown on plan, and to the entire satisfaction of the agent in charge, and to be placed in position as required by him, then to be filled with stone and covered with superstructure.

ART. 115. The bottom planking of cribs to be 3 inches by 12 inches. All top planking to be 2 inches thick and not less than 10 inches wide, well spiked to each sleeper or joist. The joists to be 3 inches by 12 inches, spaced about 20 inches from center to center, or as near that as space will allow; except through the center of the pier immediately under the flooring and extending the whole length of the pier, there will be left a space 3 feet wide in the clear, and 12 inches deep; this space to be occupied by two 6-inch suction pipes, and one 8-inch terra cotta drain pipe. The bottom to be made tight enough to hold such non-conducting material as may be used to prevent the freezing of the pipes.

ART. 116. Four white oak round piles 10 inches in diameter to be furnished and placed in position, as shown on plan.

ART. 117. The shore crib to be covered with joists, planking, etc., same as other cribs, and all to be filled to lower side of joists with stone.

ART. 118. Three white oak round fenders, each 12 inches in diameter to be furnished and placed in position, as shown on plan, and each to be securely fastened to crib.

ART. 119. A fence will be built on pier, as shown on plan; the posts to be 4 inches by 4 inches, and 3 feet 6 inches high, to have chamfered edges and pointed tops, the rails of fence to be 2 inches by 4 inches. The material of fence to be white pine. The fence to be painted two coats of paint, of color to correspond with color of hatchery.

ART. 120. Provide and put up proper lightning conductors with branches, copper points, and proper ground connections. The conductors are to be four in number, to be located at the extremities of the peak of main roof and center wing roof. The conductors to be properly insulated.

Proposal for building a fish hatchery at Put in Bay, Lake Erie.

PUT-IN BAY, O., Oct. 4, 1889.

MARSHALL McDONALD, Esq.,

U. S. Commissioner of Fish and Fisheries, Washington, D. C.:

SIR: In accordance with your advertisement of September 6th, 1889, inviting proposals for building a fish hatchery at Put-in Bay, Lake Erie, and subject to all the conditions and requirements thereof, and of your specifications, copies of both of which are hereto attached, and so far as they relate to this proposal are made a part of it, we (or) I propose to build a fish hatchery at Put-in Bay, Lake Erie, according to the specifications, at the following prices:

For the entire superstructure, including chimneys and plumbing, water-closets and sinks, with connections, tanks, with support and pier, nine thousand nine hundred and seventy-seven dollars and twenty-four cents (\$9,977.24).

For the stone masonry for foundations and basement walls, including furnishing the materials and placing same, per cubic foot actual measurement of work laid, eleven and one-half cents (\$0.11½).

For excavation for walls, trench, &c., including placing and grading, per cubic yard, measured in the cut, ——— cents (\$0.00).

The foregoing include all the materials and labor required for the work, we (or) I make this proposal with a full knowledge of the kind, quality, and quantity of the materials and labor required, and if it is accepted will, after receiving written notice of such acceptance, enter into contract within the time designated in the specifications, with good and sufficient sureties for the faithful performance thereof.

GEORGE E. GASCOYNE.

GUARANTY.

We, Valentine Doller, of Put-in Bay, in the State of Ohio, and Philip Vroman, of Put-in Bay, in the State of Ohio, hereby guarantee and bind ourselves and each of us, our and each of our heirs, executors, and administrators, to the effect that if the bid of George E. Gascoyne, herewith accompanying, dated October 4th, 1889, for building fish hatchery at Put-in Bay, Lake Erie, shall be accepted in whole or in part within sixty (60) days from the date of the opening of proposals, the said bidder, George E. Gascoyne, will, within five (5) days after being notified of such acceptance, enter into a contract with the United States in accordance with the terms and conditions and specifications, and will give bond with good and sufficient sureties for the faithful and proper fulfillment of the same. And in case the said bidder shall fail to enter into contract within the said five days with the proper officer of the United States and furnish good and sufficient bond for the faithful performance of the same in accordance with the terms of said bid and specifications, we and each of us hereby stipulate and guarantee and bind ourselves and each of us, our and each of our heirs, executors, and administrators, to pay unto the United States the difference in money between the amount of the bid of said bidder, and the amount for which the proper officer of the United States may contract with another party for the work by the said bid, if the latter amount be in excess of the former for the whole period covered by the proposal, not exceeding the sum of fifteen hundred dollars (\$1,500.00).

VALENTINE DOLLER, [SEAL.]
 PHILIP VROMAN. [SEAL.]

Witnesses:

GEORGE WHITNEY,

GEORGE WHITNEY.

Dated October 4th, 1889.

JUSTIFICATION OF THE GUARANTORS.

STATE OF OHIO, *County of Ottawa, ss:*

I, Valentine Doller, one of the guarantors named in the written guarantee, do hereby swear that I am personally worth the sum of one thousand five hundred dollars (\$1,500.00) over and above all my debts and liabilities.

VALENTINE DOLLER.

Before me.
 [SEAL.]

CLINTON IDLER,
Notary Public.

STATE OF OHIO, *County of Ottawa, ss:*

I, Philip Vroman, one of the guarantors named in the within guarantee, do hereby swear that I am personally worth the sum of one thousand five hundred dollars (\$1,500.00) over and above all my debts and liabilities.

PHILIP VROMAN.

Before me.
[SEAL.]

CLINTON IDLER,
Notary Public.

CERTIFICATE.

I, Clinton Idler, do hereby certify that Valentine Doller and Philip Vroman, the guarantors above named, are personally known to me, and that to the best of my knowledge and belief he is pecuniarily worth, over and above all of his debts and liabilities, the sum stated in the accompanying affidavit subscribed by him.

[SEAL.]

CLINTON IDLER,
Notary Public.

Contract for building a fish hatchery, pier, etc., at Put-in-Bay, Ottawa County, Ohio.
(U. S. Statutes, 25, page 954.)

This agreement, made and entered into this 25th day of October, in the year eighteen hundred and eighty-nine A. D., by and between Marshall McDonald, United States Commissioner of Fish and Fisheries, acting for and in behalf of the United States of America of the first part, and George E. Gascoyne, of Put-in Bay, Ottawa County, Ohio, contractor, of the second part.

Witnesseth, that the said party of the second part has agreed, and by these presents does agree, with the said party of the first part, for the consideration hereinafter mentioned and contained, and in accordance with his proposal of the fourth day of October, 1889, and with the specifications and plans thereto annexed, and under the penalty expressed in a bond bearing even date with these presents and hereto annexed, all of which form a part of this contract, to furnish at his own cost and expense all the necessary materials and labor to construct and complete ready for use, in a good and first-class manner, the entire fish hatchery building, pier, and so forth (as mentioned in the plans and specifications hereinbefore referred to and forming part of this contract), at Put-in Bay, Ottawa County, State of Ohio, for the following sums: (1) for the entire superstructure, including chimneys and plumbing (water-closets and sinks with connections), tanks, with supports, and pier, nine thousand nine hundred and seventy-seven dollars twenty-four cents (\$9,977.24); (2) for the stone masonry for foundations and basement walls, including furnishing the materials and placing the same, per cubic foot actual measurement of work laid, eleven and one half cents (\$0.11½); (3) for excavations for walls, trenches, etc., including placing and grading (price for which was not given in proposal hereinbefore referred to), per cubic yard measured in the cut, for earth excavation, seventy cents (\$0.70), and rock excavations, six dollars (\$6.00).

And the said party of the first part, for and in behalf of the United States of America, hereby agrees to pay to the said party of the second part the sums of (1) nine thousand nine hundred and seventy-seven dollars twenty-four cents (\$9,977.24) for the entire superstructure, including chimneys and plumbing (water closets and sinks with connections), tanks, with supports, and pier; (2) eleven and one-half cents for each cubic foot actual measurement of stone masonry laid for foundations and basement walls, including the materials furnished therefor; and (3) seventy (\$0.70) cents for each cubic yard of earth excavation and six dollars (\$6.00) for each cubic yard of rock excavation, needed for walls, trenches, and so forth, payments to be made as the same shall become due him in accordance with the terms of this contract.

In witness whereof, the parties to these presents have hereunto set their hands and seals the day and date hereinbefore written.

THE UNITED STATES OF AMERICA,
By MARSHALL McDONALD,
U. S. Commissioner of Fish and Fisheries.
GEORGE E. GASCOYNE, *Contractor.*

Signed, sealed and delivered in the presence of J. J. O'Connor and Herbert A. Gill, as to Marshall McDonald; John Brown, jr., and Clinton Idler as to George E. Gascoyne.

(Executed in triplicate).

BOND OF INDEMNITY.

Know all men by these presents, that we, George E. Gascoyne, of Put-in Bay, Ottawa County, Ohio, as principal, and Valentine Doller, of Put-in Bay, Ohio, and Phillip Vroman, of Put-in Bay, Ohio, as sureties, are held and firmly bound unto the United States of America, in the sum of ten thousand dollars (\$10,000.00) lawful money of the United States of America, to be paid to the said United States of America, for which payment well and truly to be made, we bind ourselves, our heirs, executors, and administrators, jointly and severally, firmly by these presents.

Sealed with our seals and dated the 25th day of October, eighteen hundred and eighty-nine.

Whereas the said George E. Gascoyne has entered into a contract with the United States of America, by the United States Commissioner of Fish and Fisheries, bearing date the 25th of October, eighteen hundred and eighty-nine, for the construction of a fish-hatchery, pier, etc., at Put-in Bay, Ottawa County, Ohio:

Now the condition of this obligation is such that if the said George E. Gascoyne shall well and truly keep and perform all the terms and conditions of said contract on his part to be kept and performed, and shall indemnify and save harmless the said United States of America as therein stipulated, then this obligation to be of no effect, otherwise to remain in full force and virtue.

GEORGE E. GASCOYNE.
VALENTINE DOLLER.
PHILLIP VROMAN.

Signed and sealed in the presence of John Brown, jr., and Clinton Idler, Put-in Bay, Ohio.

JUSTIFICATION OF THE GUARANTORS.

STATE OF OHIO, *County of Ottawa*, ss:

I, Valentine Doller, of Put-in Bay, Ohio, one of the guarantors named in the foregoing bond of indemnity, do hereby swear that I am worth the sum of ten thousand dollars over and above all my just debts and liabilities for any cause whatever, to the best of my knowledge and belief.

VALENTINE DOLLER.

Subscribed and sworn to before me this 25th day of October, 1889, A. D.

CLINTON IDLER,
Notary Public.

STATE OF OHIO, *County of Ottawa*, ss:

I, Phillip Vroman, of Put-in Bay, Ohio, one of the guarantors named in the foregoing bond of indemnity, do hereby swear that I am worth the sum of ten thousand dollars over and above all my just debts and liabilities for any cause whatever, to the best of my knowledge and belief.

PHILLIP VROMAN.

Subscribed and sworn to before me this 25th day of October, 1889, A. D.

CLINTON IDLER,
Notary Public.

I certify that the above-named sureties are personally well known to me, and that they are sufficient for the penalty indicated in the foregoing bond.

GEO. DANIEL, P. M.,
Sandusky, Ohio, Erie County.

This certificate to be given by some U. S. official.

WASHINGTON, D. C., Dec. 30, 1889.

We, George E. Gascoyne, contractor for the erection of the buildings, etc., for the U. S. Fish Commission at Put-in Bay, Ohio, and George E. David, superintendent of construction on the part of the United States Fish Commission, hereby agree to the following changes in specifications and plans of said building, etc., the same to be made with the understanding that no claim for payment beyond the amount called for by this contract is to be made by the contractor, and that no claim for deduction from the amount of said contract is to be made on the part of the U. S. Fish Commission.

COAL-SHED.

The coal-shed to be enlarged to the following dimensions: 30' x 20' x 12" inside.

Framing: Sills, 6" x 8" pine; plates, 4" x 6" pine; two corner posts, 6" x 8" pine; studding, 3" x 6", set 16" from centre to centre; rafters, 2" x 6", set 24" from centre to centre. Sills to be lapped at the corner.

Roof: To be sheathed and covered with I. C. bright tin, well anchored to the sheathing and painted one coat of mineral paint on the underside and two on the outside. Inside of the room to be sheathed with 1" rough boards put on diagonally outside, to be sheathed diagonally with surface boards and then covered with building paper. The whole to be covered with $\frac{7}{8}$ " channel sliding. There will be a sliding door 4' x 4' x 2" put on the rear end of the house close to the top of building, hung on rollers, and to have loose planking put across the inside, this door to be used for storing coal. One window 2' x 3' hung on hinges and provided with a suitable spring catch, to be put in each side of the house sufficiently high to be above the coal level. There will be a tin gutter and down spout provided.

The house to have two coats of paint same color as main building.

Foundation walls: To be 12" wide on top, laid smooth where it shows above ground. The earth to be removed inside the building to the solid rock, and the rock to be merely leveled off so as to make a smooth floor. The cost of the superstructure to be five hundred (\$500.00) dollars, less the estimated cost of the original coal-house, two hundred and seventy-five (\$275.00) dollars, or two hundred and twenty-five (\$225.00) dollars (\$500—\$275 = \$225). The rock excavation to cost \$6.00 per cu. yd.; earth excavation, 70 cts. per cu. yd.; stone masonry, 11½ cts. per cu. ft.

GEO. E. GASCOYNE,

Contractor.

GEO. E. DAVID,

Sup't of construction, U. S. Fish Commission.

Approved:

M. McDONALD,

Commissioner.

We, George E. Gascoyne, contractor for the erection of the building, etc., for the U. S. Fish Commission at Put-in Bay, Ohio, and George E. David, superintendent of construction on the part of the United States Fish Commission, hereby agree to the following changes in the specifications and plans of said building, etc., the same to be made with the understanding that no claim for payment beyond the amount called for by the contract is to be made by the contractor, and that no claim for deduction from the amount of said contract is to be made on the part of the U. S. Fish Commission.

CHANGES IN SPECIFICATIONS.

1. Art. 31. Hemlock changed to pine.
2. Art. 33. Flooring of coal shed to be 2" instead of 1".
3. Art. 44. Porch posts to have iron spindles and sockets at foot, instead of being framed into the sills.
4. A door to be put in in place of the window in main building on the south side of the office.
5. Do away with "nailing strips" on the tarred paper of roof where shingles are used.
6. Put "holding down bolts" through the stringers for the iron plates of trench to rest on.
7. Raise the office floor 2" above the floor of main building.
8. Concrete the bottom of trench instead of laying a course of brick.
9. Have the middle pier out 11 feet from shore, so as to divide the space equally between the piers.
10. Instead of the 12" x 4" ridge pole, put in two 6" x 4" purlins at the peak of roof.
11. Move the office chimney so as to bring the fire-place in the center of the room.(?) Also build the chimney in boiler-house on a solid brick pier 1'x2'x8" and start the flue from where the boiler smoke duct enters the chimney.
12. Make a concrete finish around the bottom of wainscoting instead of brick.
13. Change the position of truss-rafters and space them so that there will be six instead of eight as shown in plans.
14. Make the roof-gutters of strips covered with tin instead of the wooden gutters as called for in the specifications.
15. Put two glass panels in the door between the office and main building. Make door-sills of 2" oak.
16. Use but one collar beam on rafters instead of two, and one vertical hanger.
17. Do away with the outside drains for down spouts.

18. Do not put in the 4" terra cotta drain pipe in the trench to boiler room, and which was to connect with the 8" drain.

19. Put in a 1½ inch pipe through the foundation walls at each corner of the building for the purpose of connecting the exhaust pipes from radiators.

20. The drain pipes at each end of the hatchery building to be laid inside the building.

GEO. E. GASCOYNE,
Contractor.

GEO. E. DAVID,
Supt. of Construction U. S. Fish Commission.

Approved.

M. McDONALD,
Commissioner.

Contract for erecting tables, troughs, and collecting tank with the connecting pipes for the United States fish hatchery, Put-in Bay, Lake Erie.

This agreement, made this first day of March, eighteen hundred and ninety, by and between Marshall McDonald, United States Commissioner of Fish and Fisheries, acting for and in behalf of the United States of America, of the first part, and George E. Gascoyne, Put-in Bay, county of Ottawa, State of Ohio, of the second part.

Witnesseth, that the said party of the second part, for the consideration hereinafter mentioned, as to be paid by the said party of the first part, hereby agree to furnish all the necessary materials and labor for and to properly construct and connect in accordance with the requirements of the accompanying plan and specifications, which are to be considered as forming part of this agreement, the tables, troughs, collecting tank, and connecting pipes, for the United States fish hatchery, at Put-in Bay, Ohio, the whole work to be subject to the approval of the agent of the United States before payment will be made.

And the said party of the first part hereby agrees to pay to the party of the second part on the completion of the work heretofore mentioned to be by him performed, the sum of nine hundred and twenty-seven dollars (\$927.00), when the same shall be certified by the agent of the United States in charge of the work as having been performed.

In witness whereof, the parties to these presents have hereunto set their hands and seals the day and year hereinbefore written.

THE UNITED STATES OF AMERICA,
By MARSHALL McDONALD,
U. S. Commissioner of Fish and Fisheries.
GEORGE E. GASCOYNE.

With presence of
W. B. BAYLEY.

ADVERTISEMENTS, INSTRUCTIONS FOR BIDDERS, AND SPECIFICATIONS, FOR ERECTING A STEAM AND WATER DISTRIBUTING PLANT IN THE BUILDING OF THE U. S. HATCHERY, PUT-IN BAY, LAKE ERIE.

Advertisement.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., January 2, 1890.

Sealed proposals for erecting a steam and water distributing plant in the building of the United States fish hatchery, Put-in Bay, Lake Erie, will be received at this office up to 12 o'clock, noon, February 10, 1890, when they will be opened in the presence of attending bidders. Specifications, plans, forms of proposals, etc., can be seen at the offices of Henry Douglass, State fish hatchery, Sandusky, Ohio; George D. Mussey, secretary State fish commission, Detroit, Michigan; Edward E. Schwabe, Beckman Building, 204 Superior street, Cleveland; and George E. David, U. S. Fish Commission, Put-in Bay, Lake Erie.

MARSHALL McDONALD,
Commissioner.

INSTRUCTIONS FOR BIDDERS.

(1) The plant is to be erected in the new Government fish hatchery at Put-in Bay, Lake Erie.

(2) Each copy of proposal must be accompanied by a guaranty executed by two sufficient and responsible guarantors, in accordance with and on the forms prescribed. The guarantors must jointly justify in the sum of one thousand dollars (\$1,000). A proposal unaccompanied by such guaranty will not be considered.

(3) The affidavits of justification on the back of the bidder's guaranty must be taken before some official or person authorized by the laws of the United States, State, or Territory, to administer oaths.

(4) The certificate following the justification, is to be given under seal, if any, by some *civil official* of the *United States*.

(5) Each signature of bidders and guarantors shall have attached a seal of wax or wafer, and shall be attested by at least one witness for each signature, which must be written in full.

The residence of each signer must be given with number, street, city or town, and State.

(6) No person who as a contractor has failed to satisfactorily perform any contract with the United States, or as surety has failed to abide by a bond for the performance of any contract or a guaranty with a proposal, will be accepted as guarantor.

(7) A firm will not be accepted as guarantor, nor a partner for a co-partner or for a firm of which he is a member.

An officer of a corporation will not be accepted as guarantor for such corporation.

(8) All blanks in the forms of proposals and guaranty must be filled; prices must be written in words as well as expressed in figures.

(9) Additional copies of this form will be furnished on application.

(10) Alterations by erasure or interlineations must be explained or noted in the proposal over the signature of the bids.

(11) When firms bid the individual names of the members of the firm should be written out and signed in full; but the signers may, if they choose, describe themselves in addition as doing business under a given name and style as a firm.

(12) Reasonable grounds for supposing that any bidder is interested in more than one bid for the same item will cause the rejection of all bids in which he is interested.

(13) The United States reserves the right to reject any and all bids, or parts of bids; also to disregard the bid of any failing contractor or bidder known as such to the United States.

(14) The bidder must satisfy the United States of his ability to furnish the materials and to perform the work for which he bids. Lack of evidence as to ability to furnish plant, materials, and to properly construct the same will be sufficient cause for the rejection of any bid.

(15) Within five (5) days after he has been notified of the acceptance of his bid, the successful bidder will be required to enter into a written contract with the United States, accompanied by a bond for the same amount as the total sum of the bidder's offer for the entire work, executed by the bidder as principal and two sufficient and responsible persons as bondsmen.

Each bondsman will be required to qualify in the full amount of the bond.

(16) Payment on account of contracts can only be made to principals. Assignments and powers of attorney to collect moneys from the United States are not recognized.

(17) Transfers of contracts or of interests in contracts are prohibited by law.

(18) One copy each of the advertisement, instructions for bidders, and specifications must be attached to each proposal and be considered a part of it.

(19) Bidders are expected to familiarize themselves with the location of the proposed plant and to make their own estimate of the facilities and difficulties attending its construction. Claims for extra compensation based upon the contractor's ignorance on the above points will not be considered.

(20) The proposal and guaranties must be placed in an envelope, sealed and marked "Proposal for the plant for fish hatchery at Put-in-Bay, Lake Erie," and inclosed in another envelope addressed to "Marshall McDonald, U. S. Commissioner of Fish and Fisheries, Washington, D. C."

(21) No proposals can be received by telegraph, and none will be received after the time stated in the advertisement.

Specifications for erecting a water-distribution and steam-heating plant in the building of the U. S. Fish Commission Station Put-in-Bay, Lake Erie, Ohio, 1889.

1. The whole is to be done in accordance with these specifications and accompanying plans prepared by the engineer of the U. S. Fish Commission, and no deviation therefrom will be permitted unless authority in writing shall be first obtained from

the authorized agent of the U. S. Fish Commission. Any change of plans, etc., involving any difference in cost from that prepared by the original contract, must be agreed upon by the parties to this contract, and state in writing the difference in price from that originally agreed upon.

2. Should it be deemed desirable during the construction of the proposed plant to make any additions to, or to do any extra work not contemplated or provided for by these plans and specifications, an agreement in writing, stating the nature and cost of such addition or extra work, to be entered into between the U. S. Commissioner of Fish and Fisheries and the contractor before such work is commenced. No claim for extra work or materials, excepting as above specified, will be considered.

3. The work will be under the direction of the inspector or other agent of the U. S. Fish Commission, and all materials and workmanship must be satisfactory to him before payment therefor will be made.

4. In case any misunderstanding should arise between the agent of the Government in charge and the contractor as to the meaning or intention of any portion of these plans and specifications the decision of the U. S. Commissioner of Fish and Fisheries upon said disputed point or points will be considered correct, and will be final.

5. The United States will not be liable for any injury occurring to the contractor's employés or plant, or loss occurring to the contractor, or damage to the plant caused in any manner, before the final completion and acceptance of the plant.

6. The plant must be erected, tested, and ready for use by the 1st day of August, 1890.

7. No extension of time for whatever cause for the completion of the contract for this work shall be asked for or granted, except under the implied and understood condition that the contractor shall be charged with, and shall pay to the United States the sum of fifteen dollars (\$15.00) per day for each and every day that the plant is not completed and ready for delivery, after the time specified. Said penalty shall be deducted from any amounts due the contractor on account of this work at the discretion of the U. S. Commissioner of Fish and Fisheries.

8. In case the lowest price be named by two or more bidders, these bidders must agree between themselves within twenty-four (24) hours after notification as to who shall have the award. If the question be not thus settled within the time stated and the Commissioner of Fish and Fisheries so informed, he may select either of them to do the work at his discretion at said price.

9. Payment for the work done will be made after the end of each month when the progress and character of the work are satisfactory, but not otherwise.

10. Twenty per centum of the amount due will be retained until the plant has been completed and tested by the contractor in the presence and to the satisfaction of the authorized agent of the U. S. Fish Commission. Within thirty days thereafter final payment for the work will be made.

11. The "Instructions for bidders," as far as they may be applicable, are to be considered essential parts of these specifications.

12. The tools, scaffolding, etc., used by the contractor must be suitable for the work and satisfactory to the agent in charge.

13. The contractor shall furnish all necessary plant, materials, and labor. He shall allow the agent of the Fish Commission in charge of the work full access to all parts of the work at all times, and shall give the agent any assistance which he may need.

14. All materials furnished for the work must be first class of their kind, and satisfactory to the agent in charge; any materials not satisfactory will be condemned and must be removed from the location of the work, and be not again brought upon the ground.

15. All workmanship must be neat and first-class, and any work not so must be corrected immediately upon the request of the agent in charge.

16. The contractor or his agent must give his personal superintendence to the work during its progress and see that the work is done in the most careful manner, and according to the true intent and meaning of the drawings and these specifications, all of which are attached to the contract, and form a part thereof.

17. The plant will be erected under the supervision of and to the entire satisfaction of such person or persons as may be designated by the Government. No advantage may be taken of any omission in these specifications or accompanying drawings, as a full explanation and detail drawings will be given to the contractor for any part of the work not sufficiently understood.

BOILERS.

18. Type: There will be two (2) cylindrical, 20 H. P. steel boilers with outside furnaces, cast-iron arched fronts, set in brick-work.

19. Diameter: Thirty-six (36) inches.

20. Length: Eleven (11) feet.

21. Grate surface: Furnaces thirty-six (36) inches wide, forty-two (42) inches long 10½ square feet.

22. Heating Surface: Three hundred (300) square feet.

23. Tubes: Each boiler to contain thirty (30) of the best American lap-welded tubes each 3 inches in diameter and 10 feet long. All tube holes to be properly spaced and their outer edges slightly rounded. The tubes to be expanded with a dudgeon expander. The ends of the tubes to be slightly flared over, not beaded.

24. Material: Material used to be of the best homogeneous open hearth steel with a tensile strength of 60,000 lbs. per square inch; elongation of twenty-five (25) per cent. with a reduction of area not less than forty-five (45) per cent. and must turn over and hammer down cold without fracture.

25. Thickness of metal: Of shell one-fourth inch, tube-plates three-eighths inch, steam dome three-eighths inch.

26. Steam dome: Twenty (20) inches diameter and twenty-two (22) inches high. To have a composition boss bolted on the centre of the head or a steel ring riveted on tapped for a 2½ inch steam pipe.

27. Hand holes: A hand hole of 4" x 6" in each head under the tubes and one in the front head above the tubes fitted with plate, guard, bolt and gaskets, and to have steel strengthening rings riveted on inside.

28. Bracing: The tube sheets in steam space to be braced with three 1½ inch longitudinal braces set up with a nut and washer on each side of the tube plates. The ends of braces to be up-set so that the section of metal through the head will be the same as through the body of the brace.

29. Dome: The heads of domes to be braced with three (3) 1-inch braces riveted to the side of the dome.

30. Workmanship: The boiler to be made in the best manner, the punching to be done with the utmost care, so that the holes will come fair; the edges of plates to be planed. All flanges to be properly turned and free from defects.

31. Riveting: Longitudinal seams and domes to be double riveted. All other seams to be single riveted. No seams to come where the flames impinge on the metal.

32. Castings: Two fronts with doors for access to the tubes, also furnace and ash-pit doors, with knobs and catches for the same; anchor bolts, 4 wall braces, tie rods dead plates, arch plates. One set of grate bars for each boiler with bearing bars lug plates and rollers clearing out doors, and frames for backs of boilers, and rear arch bars.

33. Fittings: Two (2) 2½-inch iron body safety-valves with composition seats and stems, and with levers and weights; two (2) steam gauges (6-inch dials); two (2) glass water gauges with shut-off cocks and guards; two (2) water columns with two sets of gauge cocks; two (2) 1-inch blow-off cocks; one injector with a capacity of at least 8 galls. of water per minute; two (2) 1-inch brass stop-valves; two (2) 1-inch brass check-valves.

34. Tests: When completed the boilers to be tested to a hydrostatic pressure of 150 lbs. per square inch, and before being accepted to be subjected to the inspection of the engineer of the Fish Commission.

35. Manner of setting: The boilers will be set as follows: Bottom of fronts to set up five inches above the floor level (which is two courses of brick). Front edges of moulding on bottom of front to set back two inches from front edge of brick. Ash pits under the grates to slope down from bottom of ash door to the floor level.

Rollers and plates to go under the rear brackets only.

The front brackets to rest down on the walls without rollers or plates. The inside walls to commence to taper from top of grates to a line five inches under the brackets to give a space of four inches between boiler and wall. The piers directly under the brackets to be carried up straight and to be four inches wider than the bottom of the bracket, giving a good surface for the bracket to rest on.

The inside walls should close into the boiler on a line five inches under the brackets, which is two courses of brick. The outside and inside walls to have an air space of three inches between them, and to have headers run from wall to wall every eighteen inches, but not tied together.

Fire-brick in the furnaces to be laid with a course of headers every five or six courses so that the walls can be taken out easily and repaired at any time.

36. Boiler brichen: The smoke boxes of both boilers to be connected to each other and to the vertical flue, as shown in the drawings, by a smoke pipe 18 inches diameter, increased to 22 inches from the union of the two boilers to the vertical flue, made of No. 14 iron; a damper to be provided for each boiler in the vertical section.

37. Main steam connections: Both boilers will be connected from the steam drums by 2½-inch steam pipes. Each boiler to be provided with a 2½-inch stop valve; both boilers to connect into one 3½-inch steam main, as shown in drawings; the steam pipe of each boiler to have a safety valve attached, in the manner shown in the drawing.

38. Injector: The steam for the injector to be taken from the top of each steam dome, by a separate connection.

The water supply for injector to be taken from the pipe leading from the main tank after passing through the feed-water heater.

39. Feed and blow: The feed and blow to be connected to the rear end of the boiler by one pipe. The $1\frac{1}{4}$ -inch blow pipe to be carried down through the trench to the lake, as shown in the drawings. The feed pipe to lead from the auxiliary steam pump.

40. Firing tools: One set of fire tools, consisting of 2 hose, 2 slice bars, and 1 pricker, to be provided.

41. Asbestos covering: The boilers above brick-work, also steam dome, to be covered with $2\frac{1}{2}$ inches of asbestos cement.

PUMPS.

42. Kind and capacity: Two No. 8 Davidson pressure-pumps, $14'' \times 8\frac{1}{4}'' \times 14''$, with a capacity of 600 galls. of water per minute, and one $4\frac{1}{2}'' \times 2'' \times 6''$, to be used for feeding the boilers, will be furnished by the Fish Commission, and will be delivered to the contractors in the building. The pumps will be erected where shown on the drawings.

43. Foundation: The large pumps to set on stone slabs $6'' \times 25'' \times 7' 6''$ laid on a brick foundation 12 inches above the floor.

44. Feed-pump: The small feed-pump to be set on a suitable foundation where shown in the drawing. Steam-pipe to be connected to the steam-pipe of one of the large pumps. The exhaust to lead into the main vertical exhaust-pipe, suction to be connected to the main tanks, through the feed water-heater, and to deliver the water to the back ends of both boilers through the boiler blow-pipes.

PIPES AND FITTINGS.

45. Pump steam-pipes: The steam-pipes, $2\frac{1}{2}$ inches diameter, will connect with the $3\frac{1}{2}$ -inch main, as shown in the drawing, and will be provided with a $2\frac{1}{2}$ -inch stop-valve near each pump.

46. Exhaust-pipes: The three-inch exhaust-pipes from each pump will connect to a 4-inch vertical exhaust-pipe, which will be carried up through the roof, as shown. The bottom end to be provided with a $\frac{3}{4}$ -inch drain-pipe and cock to connect with the boiler blow-pipe in the trench.

47. Three-inch exhaust-pipe to radiators: The exhaust of one pump will also connect with a 3-inch pipe leading from the boiler-room into and across the hatchery-room overhead, the radiators all to connect to this pipe so that the exhaust steam can be utilized for heating purpose. The exhaust-pipe on this pump will be provided with a Jenkin's "back-pressure valve" close to the vertical 4-inch exhaust-pipe; there will also be a 3-inch stop-valve on the 3-inch exhaust-pipe leading to radiators, by which means the exhaust steam from this pump can be turned into the vertical 4-inch pipe, or through the 3-inch pipe into the radiators at will.

48. Live steam connection with radiators: There will also be a two-inch pipe connection, with globe-valve, between the $3\frac{1}{2}$ -inch steam main in the boiler-room and the 3-inch exhaust-pipe in hatchery-room, so that live steam can be used on the radiators if desired.

49. Radiators: Four radiators with return bends, each made up of 9 lengths of $1\frac{1}{2}$ -inch pipe 16 ft. long, and located in the hatchery-room, as shown in the drawings, will be provided.

These radiators to be connected with the three-inch exhaust-pipe, where shown in the drawings, the pipes to pass through the foundation at each corner of the building and to connect with a 2''-pipe leading down to the lake. Each radiator to be provided with a $1\frac{1}{2}$ -inch stop-valve and all the pipes where visible to be bronzed. A similar radiator composed of 9 lengths 8 ft. long to be put up in office where indicated in the drawings, one in the bed-room above the office and one in the tank-room, all to be connected with the 3-inch exhaust-pipe. The condensed water of small radiators to be carried by a separate pipe through the trench to the open air under the wharf.

50. Feed-water heater: The exhaust steam from the other large pump will pass through a No. 4 National feed-water heater having a 1-inch coil, thence to the 4-inch vertical pipe. The coil to connect with the main water-tanks and also with the suction-pipe of feed-pump and injector.

51. Main suction-pipes: The large pumps will take their water supply through separate 6-inch wrought-iron pipes running in the trench across the building and under the floor of the wharf, as shown in the drawings, to the end of the wharf about 138 ft. from the pump, where the ends of pipes will drop into the water 4 ft. below the mean water level.

52. Strainer check-valve and air-chamber: Each pipe will be provided with a wrought-iron strainer and brass-mounted check-valve. An air-chamber on each suction-pipe, to be furnished by the Commission, will be fitted close to the pumps.

53. Delivery-pipes: A 5-inch wrought-iron pipe will deliver the water from each pump to the main distributing-tanks.

54. Fire-hose: To provide 100 feet of 2½-inch rubber fire-hose, in two sections, of 50 ft. each, with 2 brass-hose pipes and 2-spanners. Also 20 feet of 1-inch rubber hose with hose-pipe.

55. Fire-hose connections: One of these delivery-pipes will be provided with a straight way-valve, near the pump. From a T close to the valve reduced to 3½ inches, a 3½-inch pipe will lead through the partition into the hatchery-room; a "Y" connection with brass caps for two sections of 2½-inch rubber fire-hose will be placed on the end of the pipe, also a 3½-inch straight way-valve.

56. Ash hose. A connection to be made on the 1-inch pipe from main tanks before it connects with feed-water heater and carried to a convenient place near the boilers provided with valve and 1-inch hose connection, for the purpose of wetting down ashes.

57. Distributing-pipes: Each distributing-water tank will have a five-inch pipe connection through the bottom of the tank, the connection to be made with lock nuts and gaskets, on each side. Each tank will be provided with a five-inch straight way-valve under the floor; the pipe from each tank will then connect with one vertical 7-inch pipe, which will connect with the 5-inch horizontal distributing-pipes, leading towards each end of the building.

These pipes will also be provided with a 5-inch straight way-valve before connecting with the 5-inch cross-pipes.

The 5-inch cross-pipes will be fitted with T's reduced to 2 inches, into which five 2-inch pipes will fit; these pipes to run the whole length of the hatching tables at each end of the building.

Each of the 2-inch pipes will have 120 one-eighths inch brass pet-cocks (1,200 in all) of a pattern which will be furnished by the Commission, fitted as shown in the drawings. The outer ends of these pipes to be closed with a cap.

58. Hangers: All of the horizontal pipes in the hatchery-room to be suspended from the ceiling by strong and suitable hangers, so that the center of pipes will be 8 ft. from the floor.

59. Overflow and drain, main tanks: A five-inch overflow pipe to be connected close to the top of each distributing tank with lock-nuts and gaskets, the pipes to lead down the sides of the tanks, and to be connected with 2½-inch drain pipes, located close to the bottom of the tanks, the drain pipes to be connected to the tanks with lock-nuts and gaskets and to be provided with gate valves, the 5-inch overflow pipes to lead down and connect with the 8-inch sewer, as shown in the drawings.

60. Overflow and drain, collecting tank: There will be two 5-inch overflow pipes connected through the bottom of the collecting tank with lock-nuts and gaskets; these pipes to connect with the 8-inch sewer and to be carried up vertically inside the tank so that the top of the pipes will be 2½ inches lower than the top of the tank, the ends to be covered with wire-gauze, a 2½-inch drain pipe to be fitted to one end of the tank with lock nuts and gaskets, provided with a 2½-inch straight way valve, and to lead into one of the 5-inch overflow pipes from the main distributing tanks.

61. Material: All wrought iron pipes above 2" dia., to be lap-welded. Steam pipes connecting with the boilers to be "extra strong."

62. Valves: All valves to be of the iron body, brass mounted type. For the straight way valves either the Ludlow or Chapman valve can be used.

63. Drainage: The main steam-pipe from the boilers to be drained into the boiler blow-pipe by a ¾-inch pipe and cock.

64. Pipe-covering: All live steam-pipes in the boiler-room to be covered with ¼-inch sheet asbestos and hair felting, the whole to be covered with No. 1 canvas, neatly sewed on, and afterwards painted one coat of lead color. All water-pipes to be painted one coat of asphaltum.

The space under the flooring of wharf containing the two 6-inch suction pipes from the front of building to the end of wharf, to be filled with sawdust or any suitable material which will prevent the water from freezing in the pipes.

65. Material and labor: All the material and labor necessary for the erection of the plant complete and ready for use, in accordance with the foregoing specifications, to be furnished by the contractors, with the exception of the three steam pumps, which will be furnished by the Commission.

Proposal for erecting a steam and water distributing plant in the building of the U. S. Fish Hatchery, Put-in Bay, Lake Erie.

TOLEDO, OHIO, Jany. 30th, 1890.

MARSHALL McDONALD, Esq.,

U. S. Commissioner of Fish and Fisheries, Washington, D. C.:

SIR: In accordance with your advertisement of January 2, 1890, inviting proposals for erecting a steam and water distributing plant in the building of the U. S. Fish Hatchery at Put-in Bay, Lake Erie, and subject to all the conditions and re-

quirements of the instructions and specifications hereto attached, which so far as they relate thereto, are made a part of this proposal, we (or) I agree to furnish all labor and material and to erect said plant, for the sum of twenty-six hundred and fifty dollars (\$2,650.00).

DANIEL C. SHAW,
CORNELIUS KENDALL,
WM. HARDEE,
JOS. L. WOLCOTT,

Doing business under the firm name of Shaw, Kendall & Co.

Witnesses:

A. H. LANG.
E. S. LUDLOW.
S. S. COOKE.
J. H. BARR.

We (or) I make this proposal with a full knowledge of the kind, quality and quantity, of the materials and labor required, and if it is accepted, will after receiving written notice of such acceptance, enter into contract within the time designated in the specifications, with good and sufficient sureties for the faithful performance thereof.

DANIEL C. SHAW.
CORNELIUS KENDALL.
WILLIAM HARDEE.
JOS. L. WOLCOTT.

Witness:

A. H. LANG.
E. S. LUDLOW.
S. S. COOKE.
J. H. BARR.

GUARANTY.

We, James L. Creswell, of Toledo, in the State of Ohio, and Edward McLeary, of Toledo, in the State of Ohio, hereby guarantee and bind ourselves, and each of us, our and each of our heirs, executors, and administrators to that effect, that if the bid of Shaw, Kendall & Co., herewith accompanying, dated Jany. 30th, 1890, for erecting a steam and water distributing plant in the building of the United States fish hatchery at Put-in Bay, Lake Erie, shall be accepted within sixty (60) days from the date of the opening of proposals, the said bidders, Shaw, Kendall & Co., will within five (5) days after being notified of such acceptance enter into a contract with the United States in accordance with the terms and conditions and specifications, and will give bond with good and sufficient sureties for the faithful and proper fulfillment of the same. And in case the said bidder shall fail to enter into contract within the said five (5) days with the proper officer of the United States and furnish good and sufficient bond for the faithful performance of the same in accordance with the terms of said bid and specifications, we and each of us hereby stipulate and guarantee, and bind ourselves and each of us, our and each of our heirs, executors, and administrators, to pay unto the United States the difference in money between the amount of the bid of said bidder, and the amount for which the proper officer of the United States may contract with another party for the said work, if the latter amount be in excess of the former, for the whole period covered by the proposal, not exceeding the sum of one thousand dollars (\$1,000.00).

JAMES L. CRESWELL.
EDWARD MCLEARY.

Witnesses:

D. McKENNA.
CHARLES W. WAITE.
Dated Jany. 30th, 1890.

JUSTIFICATION OF THE GUARANTORS.

STATE OF OHIO, *County of Lucas*, ss:

I, James L. Creswell, one of the guarantors named in the written guarantee, do hereby swear that I am personally worth the sum of one thousand dollars (\$1,000.00) over and above all my debts and liabilities.

JAMES L. CRESWELL.

Subscribed and sworn to before me this January 29th, 1890.

I. E. KNIVELY,
Notary Public.

STATE OF OHIO, *County of Lucas, ss :*

I, Ed. McLeary, one of the guarantors named in the within guarantee, do hereby swear that I am personally worth the sum of one thousand dollars (\$1,000.00) over and above all my debts and liabilities.

ED. MCLEARY, Jr.

Subscribed and sworn to before me this January 29th, 1890.

I. E. KNIVELY,
Notary Public.

CERTIFICATE.

I, Wm. H. McLyman, do hereby certify that the guarantors named are personally known to me, and that to the best of my knowledge and belief each is pecuniarily worth, over and above all of his debts and liabilities, the sum stated in the accompanying affidavits subscribed by them.

WM. H. MCCLYMAN,
Collector.

Contract for erecting a steam and water distributing plant in the building of the United States fish hatchery, Put-in Bay, Ohio.

This agreement, made and entered into this 11th day of March, eighteen hundred and ninety, by and between Marshal McDonald, United States Commissioner of Fish and Fisheries, acting for and in behalf of the United States of America, of the first part, and Daniel C. Shaw, Cornelius Kendall, William Hardee, and James L. Wolcott, doing business under the firm name of Shaw, Kendall & Company, of the city of Toledo, County of Lucas, and State of Ohio, contractors of the second part,

Witnesseth, that the said parties of the second part have agreed, and by these presents do agree, with the said party of the first part, for the consideration hereinafter mentioned and contained, and in accordance with their proposal of the thirtieth day of January, 1890, and with the specifications and plans thereto annexed, and under the penalty expressed in a bond bearing even date with these presents, and hereto annexed, all of which form a part of this contract, to furnish at their own cost and expense all the necessary materials and labor to construct, erect, and complete ready for use, in a good and first-class manner, and to the satisfaction of the agent of the United States acting as inspector of the work, the steam and water distributing plant required for the United States fish hatchery at Put-in Bay, Ohio.

And the said party of the first part hereby covenants to pay to the said parties of the second part, as full consideration for the work to be by them performed, the sum of two thousand six hundred fifty dollars (\$2,650.00), as the same shall become due them in accordance with the terms of this contract.

In witness whereof the parties to these presents have hereunto set their hands and seals the day and year hereinbefore written.

THE UNITED STATES OF AMERICA,
By MARSHALL McDONALD,
U. S. Commissioner of Fish & Fisheries.

DANIEL C. SHAW,
CORNELIUS KENDALL,
WILLIAM HARDEE,
JOSEPH L. WOLCOTT,

Doing business under the firm name of Shaw, Kendall & Co.

BOND.

Know all men by these presents, that we, Daniel C. Shaw, Cornelius Kendall, William Hardee, and James L. Wolcott, doing business under the name of Shaw, Kendall and Company, of Toledo, county of Lucas, State of Ohio, as principals, and James L. Creswell, of Toledo, Ohio, and Samuel Z. Foster, of Toledo, Ohio, as sureties, are held and firmly bound to the United States of America in the sum of two thousand six hundred fifty (\$2,650.00) dollars, lawful money of the United States of America, to be paid to the said United States of America, for which payment well and truly to be made we bind ourselves, our heirs, executors, and administrators, jointly and severally, firmly by these presents.

Sealed with our seals, and dated the 11th day of March, A D eighteen hundred and ninety.

Whereas the said Daniel C. Shaw, Cornelius Kendall, William Hardee, and James L. Wolcott have entered into a contract with the United States of America, by the United States Commissioner of Fish and Fisheries, bearing date the 11th of March, eighteen hundred and ninety, for the construction and erection of a steam and water distributing plant in the U. S. Fish Hatchery at Put-in Bay, Ohio:

Now, the condition of this obligation is such that if the said Daniel C. Shaw, Cornelius Kendall, William Hardee, and James L. Wolcott shall well and truly keep all the terms and conditions of said contract on their part to be kept and performed, and shall indemnify and save harmless the said United States of America, then this obligation to be of no effect, otherwise to remain in full force and virtue.

DANIEL C. SHAW.	[SEAL.]
CORNELIUS KENDALL.	[SEAL.]
WILLIAM HARDEE.	[SEAL.]
JOSEPH L. WOLCOTT.	[SEAL.]
SAMUEL Z. FOSTER.	[SEAL.]
JAMES L. CRESWELL.	[SEAL.]

Signed and sealed in the presence of—

AUGUSTUS H. LANG.

J. W. CORWIN.

DANIEL MCKENNA.

JUSTIFICATION OF GUARANTORS.

STATE OF OHIO, *County of Lucas, ss:*

I, Samuel Z. Foster, of Toledo, Ohio, one of the guarantors named in the foregoing bond of indemnity, do hereby swear that I am worth the sum of two thousand six hundred fifty dollars over and above all my just debts and liabilities for any cause whatever to the best of my knowledge and belief.

SAMUEL Z. FOSTER.

Subscribed and sworn to before me this 11th day of March, A. D. 1890.

[SEAL.]

J. E. KINSELY,
Notary Public.

STATE OF OHIO, *County of Lucas, ss:*

I, James L. Creswell, of Toledo, Ohio, one of the guarantors named in the foregoing bond of indemnity, do hereby swear that I am worth the sum of two thousand six hundred fifty dollars over and above all my just debts and liabilities for any cause whatever to the best of my knowledge and belief.

JAMES L. CRESWELL.

Subscribed and sworn to before me this 11th day of March, A. D. 1890.

[SEAL.]

L. E. KINSELY,
Notary Public.

I certify that the above-named sureties are personally well known to me, and that they are sufficient for the penalty indicated in the foregoing bond.

GEO. E. LORENS,
Postmaster, Toledo.

This certificate to be given by some U. S. official.

Agreement to certain changes in location of steam-pumps for the Put-in Bay hatchery.

WASHINGTON, D. C., March 4, 1890.

We, Daniel C. Shaw, Cornelius Kendall, William Hardee, and James Wolcott, doing business under the firm name of Shaw, Kendall & Co., Toledo, Ohio, contractors for the erection of a steam and water distributing plant in the building of the U. S. fish hatchery at Put-in Bay, Lake Erie, Ohio, and W. B. Bayley, P. A. engineer, U. S. N., on the part of the Fish Commission, in conformity with article 2 of the specifications for the erection of the plant, hereby agree to change the location of the steam-pumps as indicated in the plan furnished by the Fish Commission, the cost of this change to be one hundred and fifty dollars (\$150.00), the same to be made with the

understanding that no claim for payment beyond the sum stated in this agreement is to be made by the contractors, and that no claim for deduction from the amount of said contract is to be made on the part of the U. S. Fish Commission.

SHAW, KENDALL & Co.,
Contractor.

W. B. BAYLEY,
P. A. Eng'r., U. S. N.

Approved:

M. McDONALD,
Commissioner.

The CHAIRMAN. Here are similar papers relating to the fish hatchery at Leadville, Colo.

The papers are as follows:

ADVERTISEMENT, INSTRUCTIONS FOR BIDDERS, AND SPECIFICATIONS FOR BUILDING A FISH HATCHERY, ETC., FOR THE UNITED STATES FISH COMMISSION NEAR LEADVILLE, COLORADO.

Advertisement.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., August 21, 1889.

RE-ADVERTISEMENT.—Sealed proposals will be received at this office until 12 o'clock noon, of Sept. 20, 1889, at which time they will be opened in the presence of attending bidders, for the construction of a fish hatchery on the Government reservation near Leadville, Colorado.

The right is reserved to reject any or all bids, or parts of bids.

Specifications, plans, blank proposals, and full information will be furnished on application to Messrs. H. M. Orohood, Denver, and R. E. Goodell, postmaster, Leadville.

MARSHALL McDONALD, Commissioner.

Proposal for building fish hatchery near Leadville, Colorado.

SEPTEMBER 13, 1889.

MARSHALL McDONALD, Esq.,

U. S. Commissioner Fish and Fisheries, Washington, D. C.:

SIR: In accordance with your advertisement of July 10th, 1889, inviting proposals for building a fish hatchery near Leadville, Colorado, and subject to all the conditions and requirements thereof, and of your specifications, copies of both of which are hereto attached, and so far as they relate to this proposal are made a part of it; we (or I) propose to build the fish hatchery near Leadville, Colorado, according to the specifications and plans prepared for the work, at the following prices:

For the entire work, both masonry and carpenters' work, including plumbing, painting, and concrete floor, with its necessary gutters and pipes all complete, twelve thousand six hundred and seventy-two (\$12,672) dollars.

For the masons' work alone, but including all excavations for the foundations and the concrete floor with its gutters, etc., and the necessary filling under the floor, seven thousand and sixty-two dollars (\$7,062.00), including plastering.

For the carpenters' work alone, but including plumbing and painting, five thousand six hundred and ten dollars (\$5,610.00).

For furnishing materials and filling up around the building to the required grade, thirty cents (\$0.30) cents per cubic yard.

For rubble-stone masonry laid from stone gathered on the premises, and used in the foundation, in excess of that shown on the plans, ten dollars (\$10.00) per cubic yard, of twenty-seven (27) cubic feet.

For furnishing and hanging inside blinds on all windows in the lower story (made as specified), should they be ordered by the agent in charge, four hundred and sixty-five dollars (\$465.00).

The foregoing prices include all the materials and labor necessary to do the work proposed. We, or I, do make this proposal with a full knowledge of the kind, quality, and quantity of the materials and labor required, and, if it is accepted, will, after receiving written notice of such acceptance, enter into contract within the time designated in the specifications, with good and sufficient sureties for the faithful performance thereof.

L. G. HUNT,
324 Elm street, Leadville, Colo.

Witness:

JOHN A. EWING.
J. A. DEAN.

Instructions for bidders.

(1) The proposed building is to be constructed on a Government reservation in Lake County, State of Colorado, five and one-half ($5\frac{1}{2}$) miles by good wagon road from Leadville and two miles from the nearest railroad station at Malta. A considerable saving in distance may be made by unloading the materials at the "race-track" on the railroad.

(2) Each copy of proposal must be accompanied by a guaranty executed by two sufficient and responsible guarantors in accordance with and on the forms prescribed. The guarantors must jointly justify in the sum of one thousand five hundred dollars (\$1,500.00).

A proposal unaccompanied by such guaranty will not be considered.

(3) The affidavits of justification on the back of the bidder's guaranty must be taken before some official or person authorized by the laws of the United States, State, or Territory to administer oaths.

(4) The certificate following the justification is to be given under seal (if any) by ~~some~~ *civil official* of the United States.

(5) Each signature of bidders and guarantors shall have attached a seal of wax or wafer, and shall be attested by at least one witness; when practicable, by a separate witness for each signature, which must be written in full. The residence of each signer must be given, with number, street, city or town, and State.

(6) No person who, as a contractor, has failed to satisfactorily perform any contract with the United States, or as surety has failed to abide by a bond for the performance of any contract or a guaranty, with a proposal, will not be accepted as guarantor.

(7) A firm will not be accepted as guarantor, nor a partner for a co-partner, or for a firm of which he is a member. An officer of a corporation will not be accepted as guarantor for such corporation.

(8) All blanks in the forms of proposals and guaranty must be filled; prices must be written in words as well as expressed in figures.

(9) Proposals and bidders' guaranties must be made in duplicate upon forms to be obtained at this office and as stated in advertisement.

Additional copies of this form will be furnished on application.

(10) Alterations by erasures or interlineations must be explained or noted in the proposal over the signature of the bidder.

(11) When firms bid, the individual names of the members of the firm should be written out and signed in full; but the signers may, if they choose, describe themselves, in addition, as doing business under a given name and style as a firm.

(12) Reasonable grounds for supposing that any bidder is interested in more than one bid for the same item will cause the rejection of all bids in which he is interested.

(13) The United States reserves the right to reject any and all bids; also to disregard the bid of any failing contractor or bidder known as such to the United States.

(14) The bidder must satisfy the United States of his ability to furnish the materials, and to perform the work for which he bids. Lack of evidence as to ability to furnish plant, materials, and to properly construct the proposed building, will be sufficient cause for the rejection of any bid.

(15) Within five (5) days after he has been notified of the acceptance of his bid, the successful bidder will be required to enter into a written contract with the United States, accompanied by a bond for the same amount as the total sum of the bidder's offer for the entire work, executed by the bidder as principal, and two sufficient and responsible persons as bondsmen. Each bondsman will be required to qualify in the full amount of the bond.

(16) Payment on account of contracts can only be made to principals.

Assignments and power of attorney to collect money from the United States are not recognized.

(17) Transfers of contracts or of interests in contracts are prohibited by law.

(18) One copy of each of the advertisements, instructions for bidders, and specifications must be attached to each proposal and be considered a part of it.

(19) Bidders are expected to familiarize themselves with the location of the proposed building, and to make their own estimate of the facilities and difficulties attending its construction. Claims for extra compensation based upon the contractor's ignorance on the above points will not be considered.

(20) The duplicate proposals and guaranties must be placed in an envelope, sealed, and marked "Proposals for fish hatchery near Leadville, Colorado;" and inclosed in another envelope, addressed to Marshall McDonald, U. S. Commissioner of Fish and Fisheries, Washington, D. C.

(21) No proposals can be received by telegraph, and none will be received after the time stated in the advertisement.

Specification of materials to be provided and of work to be done for, and in the construction of, a fish hatchery, for the U. S. Fish Commission near Leadville, Colorado.

The whole is to be done in accordance with these specifications, and accompanying plans, prepared by the architect of the U. S. Fish Commission, and no deviation therefrom will be permitted unless authority in writing shall be first obtained from him.

Any change of plans, etc., involving any difference in cost from that proposed by the original contract must be agreed upon by the parties to this contract, and state in writing the difference in price from that originally agreed upon.

Should it be deemed desirable during the construction of the proposed building to make any additions to, or to do any extra work not contemplated or provided for by these plans and specifications, an agreement in writing stating the nature and cost of such addition or extra work must be entered into between the U. S. Commissioner of Fish and Fisheries, and the contractor before such work is commenced.

No claim for extra work or materials, excepting as above specified, will be considered.

The work will be under the direction of the architect, or other agent of the Government in charge, and in case any disagreement should arise between the agent in charge and the contractor, as to the meaning or intention of any portion of these plans and specifications, the decision of the U. S. Commissioner of Fish and Fisheries upon said disputed point or points will be considered correct, and will be final.

The United States will not be liable for any injury occurring to the contractor's employees, or plant; or loss occurring to the contractor, or damage to the building caused in any manner, before the final completion and acceptance of the building.

The work is to be commenced within fifteen (15) days after the signing of the contract, and it is to be carried forward at such a rate as shall insure its completion within ninety (90) days thereafter.

No extension of time for whatever cause for the completion of the contract for this work shall be asked for or granted, except under the implied and understood condition, that the contractor shall be charged with, and shall pay to the United States, the sum of six dollars (\$6.00) per day, for each and every day that the building is not completed and ready for occupancy, after the time specified. Said penalty shall be deducted from any amounts due the contractor on account of this work.

Any failure to commence work within the specified time, or to prosecute it hereafter at the rate and in the manner required, will be considered as allowing the United States to annul the contract and declare a forfeiture of all reserved percentage and other dues, or as allowing the United States, at the option of the U. S. Commissioner of Fish and Fisheries, to carry on the work at the expense of the contractor, and as rendering him and his bondsmen liable for any increase of cost over that proposed and agreed upon.

In case the lowest price be named by two or more bidders, these bidders must agree between themselves within twenty-four (24) hours after notification, as to who shall have the award. If the question be not thus settled, within the time stated, and the Commissioner of Fish and Fisheries so informed, he may select either of them to do the work at his discretion, at said price.

Payment for the work done will be made after the end of each month, when the progress and character of the work are satisfactory, but not otherwise. Twenty per centum of the amount due will be retained until the final completion and acceptance of the work by the U. S. Commissioner of Fish and Fisheries within thirty days thereafter final payment for the work will be made.

The "Instructions for Bidders," as far as they may be applicable, are to be considered essential parts of these specifications.

The tools, scaffolding, etc., used by the contractor must be suitable for the work, and satisfactory to the agent in charge.

The contractor shall furnish all necessary plant, materials, and labor. He shall allow the agent of the Fish Commission, in charge of the work, full access to all parts of the work at all times, and shall give the agent any assistance which he may need.

All materials furnished for the work must be first-class of their kind, and satisfactory to the agent in charge; any materials not satisfactory will be condemned, and must be removed from the location of the work, and be not again brought upon the ground.

All workmanship must be neat and first-class, and any work not so must be corrected immediately upon the request of the agent in charge.

GENERAL DESCRIPTION OF BUILDING.

The proposed building will be of stone with shingled roof, and one story high.

To be of the style shown on the elevation plans.

The main portion will be one hundred (100) feet long by forty (40) feet six (6) inches wide. It will have two additions or transepts, one in the centre in front,

thirty-four (34) feet wide by sixteen (16) feet deep, and one at the rear thirty-four (34) feet wide by five (5) feet deep. At each end will be a bay fourteen (14) feet wide by five (5) feet six inches deep.

The main portion of the building, including the rear addition and both end bays will be in one room used for hatching and rearing fish. This room will have a height of eleven (11) feet six (6) inches at the side walls, and twenty (20) feet in the centre.

The front transept will be divided by a central hall six (6) feet wide, making two rooms, one of which will be used for an office and the other for a sleeping room, or other purpose. Above these rooms there will be done off in the attic a room for storage or other purposes.

FOUNDATIONS.

The foundations are to be built of the stone found on or near the premises owned by the Government. The walls will be of rubble masonry, the stones as large as can be used to advantage, and to be laid in the best quality hydraulic cement mortar.

The stones must be well beaded and bonded together, and all joints filled solid with mortar and thoroughly slushed and chinked.

The foundation walls are to be plastered on the outside with cement mortar, well put on. On the inside these walls are to be smoothly struck at the joints.

The piers for veranda and foundations for chimneys to be built as above described.

The foundation-walls to be two (2) feet thick, for all portions excepting the side walls of the end portion of the hatching-room, where they will be two (2) feet, three (3) inches thick.

The foundations are to be four (4) feet deep below the grade line, as shown on the masonry plan. At the ends of the building the bottom of the walls must be properly stepped off, and leveled top and bottom.

EXCAVATION.

The necessary excavation for the trenches will be made by the contractor, who will deposit the material inside the walls, until the grade is raised to the proper height, as elsewhere described for the concrete pavement, any surplus will be deposited where indicated by the agent in charge.

MAIN WALLS OF BUILDING.

Above the grade line, the face stone used is to be that from the quarries of the Red Cañon, and is a red sandstone, easily worked. The stone for filling and backing to be the same as that for the foundations—namely, that found in the vicinity of the work.

The style of masonry is to be quarry faced, rubble, laid as irregularly as possible. All windows and door-jambs to be built up straight, so as to make a good job in fitting the frames. The window-jambs to be recessed for box frames as shown on the masonry plan. The walls must be well bonded and laid close, with all joints well slushed and filled with mortar.

Iron anchors to be used throughout the work where necessary.

The outside joints to be filled with mortar well struck and pointed out.

The inside joints to be well filled and struck smooth. Such portions of the inside walls as are to be plastered must be smooth enough to make a good job of the plastering.

In the gable ends of the building the joints are to be struck smooth and the walls to be given two coats of whitewash.

The tops of the walls and gables must be well filled with mortar, leveled up, and troweled off smoothly.

The side walls for the ends of the hatching-room to be two (2) feet thick. The other walls to be one (1) foot, six (6) inches thick.

BASE COURSE.

A base course or water table is to be laid all around the building ten (10) inches deep, and projecting three (3) inches from the walls, with beveled outer edge. This base course to have square joints and be parallel top and bottom. The bevel is to be straight, and its top must be level, when laid.

WINDOW SILLS AND CAPS.

Stone window sills and caps to be provided. The sills shall be dressed on top to a good surface, beveled to turn water, and both sills and caps shall be straight with corners, squared and lay well in place.

ARCHES FOR DOORS AND WINDOWS.

Turn the arches over the front and rear doors, and over the gable windows. Good centres must be used for these arches, and the stones cut sufficiently on joints to make a good secure arch, the central stone or key to project a little from the others. The centers must be left in until the masonry has well set.

Furnish proper centers and turn-brick or cut-stone arches over the opening at each bay end of hatching-room.

Furnish and set stones at the corner of the gable, marked as shown on elevation plans.

All the masonry above the grade line to be laid in mortar, made of one part of hydraulic cement and one part of lime.

CHIMNEYS.

The chimneys and fire-places are to be built of brick up to the flashings at the roof, above which they will be of stone, laid as above described. The chimneys at the ends of the building to project six (6) inches from the face of the wall above the bay, as shown on end elevation plans. Start the flues for these chimneys 7 feet from the floor.

The chimneys are to have a substantial stone topping, as shown on plans.

The flues are to be well plastered on the inside.

Lead is to be furnished and built in with each course of bricks at the roof so as to turn down over the roof flashings.

Openings of chimney pots to be left as follows: One in each chimney in the hatching-room, office, bedroom, and store-room in the attic five (5) inches in diameter.

Build the fire-places in the office and hatching-room of hard-burned red brick, as shown on plan, and lay a hearth of best quality red machine-brick or tiles all in red mortar.

Provide the materials and build the balconies at the ends of the house, as shown on plan. To have dressed-stone floor and ornamental iron railing as there shown.

Provide stone steps for entrances at the ends of the building. Top step three (3) feet by four (4) feet ten (10) inches; other steps twelve (12) inch tread by six (6) inch rise. Provide ornamental iron side brackets, as shown on plan for these steps.

Provide and set stone step at the rear of the building eighteen (18) inches wide by six (6) feet six (6) inches long and seven (7) inch rise.

Leave two openings in the wall under the office and bedroom four (4) inches by eight (8) inches, fitted with cast-iron grating for ventilating the space under the floors.

All the stone used in the building must be of good quality, sound and strong, and not liable to disintegration from exposure to air or water.

The brick used in the chimneys, arches, and gutters must be hard and well burned and of good quality.

The cement and lime used must be first class in all respects, and any materials used in the masonry not satisfactory to the agent in charge will be rejected, and must be removed from the location of the work and not again brought on the ground.

EARTH FILLING IN HATCHING-ROOM.

The present surface is below the proposed grade for the floor of the hatching-room, and it must be raised to the proper level with suitable filling.

This filling shall be placed in layers not more than six (6) inches thick and carefully and compactly rolled and tramped solid up to the necessary grade.

The earth floor thus prepared must have the proper grade and slope for the concrete pavement and gutters.

At least one-half the entire floor must be prepared before any concrete is laid.

The contractor shall receive and place in position, under the concrete floor, the water-supply pipe to be furnished by the Fish Commission.

It shall be carefully laid to the proper grade without expense to the United States.

HATCHING ROOM FLOOR.

The floor of the hatching room is to be paved with concrete, made as follows: One part of hydraulic cement is to be mixed with three (3) parts of sharp, clean sand, and water added to make a mortar; four (4) parts of broken stone are then to be added, and the mass well mixed, all voids to be filled with mortar.

The ground having been prepared at the proper grade, three inches of this concrete is then to be evenly spread over the ground, and well rolled or stamped solid. A top coat of mortar one (1) inch thick, composed of one (1) part best English Portland or

"Dykerpoffee" cement to two (2) parts of sand, is then to be applied, evenly spread, and well trowelled down.

Great care is to be taken to keep the pavement at the proper grade.

Before laying the pavement, brick gutters, made as shown on the plans, are to be laid along the sides of the room and across the ends.

These gutters are to have the grade shown on the plan, and are to be provided with a movable wooden grating.

At the ends of the hatching room eight (8) inch terra cotta drain pipes are to be provided, and laid under the pavement, and passing through the walls out to the line of the balcony outside the bays.

These pipes must connect neatly with the gutters above described.

FRAMING LUMBER.

The framing lumber to be of pine, straight and sound, sawed square, free from all defects tending to injure its strength or durability, such as split, shake, black, or decayed, or large, or loose knots.

All framing to be of the size indicated on the plans. The studding in the partition between the hatching room and the front addition to be framed into sills and plate and well and strongly put together. The other partitions to be nailed strongly but not framed together.

WOODEN FLOORS.

The floors are to be double. That of the office, hall, etc., to be first ordinary matched boards, but without large or loose knots or knot holes. On this to be laid double thick rosin size building paper. The top floor to be best quality hard wood, matched flooring of narrow width. The first floor to be laid diagonally and to extend out and be scribed to the walls. Both floors to be closely laid and well nailed.

The ceiling joists to be six (6) inches by eight (8) inches in section, dressed, with chamfered edges and spaced four (4) feet on centres. The ceiling will be one and one half ($1\frac{1}{2}$) inch matched stuff laid with the dressed side down. The top floor to be seven-eighths ($\frac{7}{8}$) inch flooring of good quality, between the floors to be a double layer of best quality building paper.

Both floors to be closely laid and well laid.

MAIN ROOF.

Construct the trusses for the main roof as shown on plans. The lumber to be carefully selected, each member of the trusses to be in one piece, sound and straight, and of the full dimensions required by the plans.

The straining rods to have turn buckles for tightening, and to have proper hard wood blocks at the ends. The king rods to have proper iron plates and blocks at each end. All rods to be the best quality American wrought iron, of the full size shown, and to have the ends upset before the threads are cut.

The tie beams for the trusses to be double and well spiked to the rafters at the ends; at their intersection they are to be halved together, and the junction strengthened by two pieces of two (2) inch by ten (10) inch joist five (5) feet long, placed between them.

Such parts of the tie beams as show from the hatching room to be dressed, and faced on the bottom with a board eight (8) inches wide with chamfered edge.

BRACKETS, ETC.

Provide and put up the side and centre ornaments as shown on detail plans; the centre to be double to hide the straining rods.

Between the trusses at the sides of the room fit a board with mouldings top and bottom.

At the ends of the room, put up a half-size bracket, etc., excepting that at the gable windows the centre ornament will be run into the casing and not carried across the windows.

ROOF.

The rafters are to be covered with good quality, sound straight-edge sheathing boards, without knot-holes or loose knots, laid close, and well nailed to the rafters. Nailings not over three (3) inches apart.

The boards to be covered with the best quality building paper, and all to be shingled with the best quality sawed pine shingles, laid four and one-half ($4\frac{1}{2}$) inches to the weather, and nailed with galvanized swedes iron nails. The shingles to lay perfectly clear to the weather.

FLASHINGS.

Provide and put in zinc flashings in the valleys and against the windows, and over chimneys. To be laid in with each course of shingles, and of sufficient size as to make the work water tight.

TRUSS FOR REAR ADDITION.

Construct and place in position the truss to span the opening in the wall for the rear addition, opening thirty-one (31) feet long.

This truss to have ten (10) inch by twelve (12) inch tie beam. Rafters eight (8) inches by ten (10) inches in section and struts six (6) inches by eight (8) inches.

The king rod to be full one and one-half ($1\frac{1}{2}$) inch diameter, with ends upset before the threads are cut.

Provide and set the drops and brackets, for this truss, as shown on plan of the truss.

This truss is to be set before the roof trusses, and it will be stiffened laterally by joists to the rear wall at the bottom and the purline at the sides and top.

It is to be made of selected material, as are the main roof trusses, and must be satisfactory to the agent of the Fish Commission in charge.

WINDOWS AND WINDOW FRAMES.

Provide and set all windows and frames of the size and shapes shown on plans.

All sash to be glazed with the best quality, selected, single thick, American window-glass. All to be back puttied, sprigged and puttied in the best manner, and left whole and clean at the completion of the building.

The window frames to be made with two (2) inch white-pine stiles with proper box for cord and pulleys, and to be recessed on the inside three (3) inches for inside blinds. A plan for window frames is provided.

All to be provided with best iron pulleys and braided window cord, with cast-iron weights sufficient to balance the weight of sash and glass. Each window is to have a good, stout, bronze window-fast.

All sash to be made of one and three-quarters ($1\frac{3}{4}$) material, and all frames, sash, and trimmings to be well made of clear white pine, and all first-class in every respect.

The inside casings will be four and one-half ($4\frac{1}{2}$) inches wide, and to match door-casings, beaded on face with corner rosettes. The gable windows will be pivoted at the center, the lower end swing out; they must be so constructed as to be water-tight, and the windows in the gables of the hatching-room to be provided with a proper arrangement for opening and closing from the floor, with cords and cleat for securing the sash in place.

Provide and set the four windows in the roof as shown on plans; these windows will have ventilating slats at their ends. In the points of the gables are small windows, also provided with ventilating slats.

DOORS.

All doors to be of clean pine, well made, and of the size and style shown on plans.

All outside doors to be two (2) inches thick, and hung to two (2) inch plank frames, made for the size of doors specified.

They are to be hung on figured imitation bronze hinges, and have good outside lever lock, with night-latch.

To have imitation bronze knobs and escutcheons.

The front door will be single, three feet four inches by seven feet two inches, with side panels and lights, making the full width of door and frame, etc., five feet eight inches. It will have transom as shown on plan.

The rear door will be double, each half two feet seven inches by seven feet six inches, with transom.

This door to have foot and chain bolts.

The doors at the ends of the building to be each three feet four inches by seven feet two inches, with sixteen-inch transom. And of the style shown on plan marked "Cross-section" on center line looking south.

The doors from hall to side rooms to be panel doors as shown on plan, each three feet by six feet ten inches with sixteen-inch transoms, and one and three-fourth ($1\frac{3}{4}$) inches thick.

The doors from hall to hatching-room to be similar in style to those last named, but double, each half two feet six inches, by six feet ten inches, with sixteen-inch transom, and one and three-fourth ($1\frac{3}{4}$) inches thick.

The door to water-closet under the stairs to have upper panels of ground glass. The

door to be two (2) feet eight (8) inches by six (6) feet eight (8) inches, and one and one-half ($1\frac{1}{2}$) thick.

This door to be provided with lock and inside catch.

The door from hatching-room to stairs to be two feet ten inches by six feet ten inches, with sixteen-inch transom.

The two doors in attic will be each two feet eight inches by six feet eight inches, with twelve-inch transoms.

The door from the office to hatching-room to be similar to those from the hall to the side rooms.

All inside doors to have four panels, those down-stairs with flush ogee mouldings.

All inside doors to be hung on plain black japanned iron, $3\frac{1}{2}$ -inch by $3\frac{1}{2}$ -inch loose joint butts. To have mortise locks and black knobs, with imitation bronze trimmings.

DOOR-CASINGS.

Door-casings of the first story to be five (5) inches wide, with beaded face and square corner blocks with turned rosettes. The foot of the casings to have wash-board with mouldings as shown on plans.

The second-story doors to have plain four (4) inch casings.

All inside doors to have hard-wood sills, four (4) inches wide.

CLOSETS.

Build the closets in the hatching-room, office, and bed-rooms where shown on plan, of narrow beaded stuff, and shelve, as shown, provide them with suitable locks and spring-catches.

LONG WINDOWS.

Provide and set the long windows in ends of hatching-room, office, and bed-room, opening down to the floor. All to be double windows, size of glass as shown on plans.

MANTELS.

Provide and set in the office and hatching-room wood chimney pieces with mantel, worth twenty dollars (\$20) each.

The designs for same to be acceptable to the architect.

INSIDE BLINDS.

Should they be decided on hereafter, at the extra price as agreed. Provide and set inside blinds to the lower story windows with movable slats to centre folds.

To have three folds in each half of blind and to fold back into pocket or recess. The blinds to be of white pine, well made, provided with proper hook and button for fastening.

The slats to be stained dark.

STAIRS.

Provide materials and build the stairs where shown on plan, leading from the hatching room to the attic, with door at the top and foot of stairs.

These stairs to be three (3) feet wide with three (3) stout two (2) inch string pieces or carriages. The treads to be ten (10) inches wide and the risers seven and one-half ($7\frac{1}{2}$) inches, with winders at the foot of the stairs.

These stairs will be entirely boxed in, and no rail and baluster required, but the washboard is to be continued up the stairs on both sides and a board set at the sides ten (10) inches wide, and two (2) feet six (6) inches above the steps.

Put a step at the door leading from the attic to the loft above the hatching room, and place a path two feet wide running through the centre of the loft in both directions.

PIAZZA.

Build the piazza around the front addition, as shown on the plans.

It will be framed eight (8) feet wide. Sills to be six (6) by six (6) inch, and joists two (2) by six (6) inches.

The posts to be solid six (6) by six (6) inches, turned, as shown on section plans and detail plan, the plates six (6) by eight (8) inches.

The roof at the sides to be continued down from the main roof, with easy curve at the junction, as shown on plan.

The plates and rafters to be dressed, edges chamfered. The sheathing to be beaded edge, laid face downward, and the roof shingled, as described elsewhere for the main roof.

The floor to be one and one-fourth ($1\frac{1}{4}$) inch thick, not over six (6) inches wide, and laid with interval of one-eighth ($\frac{1}{8}$) inch between the boards. The railing to consist of posts five (5) by five (5) inches in section turned with balls on top as shown on plan.

Top rail three (3) by four (4) inches, and middle and lower rails three (3) by three inches, square baluster one and one-half ($1\frac{1}{2}$) inch square, and ornamental filling between lower part of baluster, were shown on plan. Also brackets at corner of plates and posts as shown.

Provide and set the front steps as shown in plan, eight (8) feet wide over all with treads of hard pine twelve (12) inches wide and raise six (6) inches high. The steps to have four string pieces or carriages cut from two (2) by twelve (12) inch joists. These carriages to rest on a piece four (4) by twelve (12) at the bottom which is to have a suitable foundation.

Face the side carriages with one and one-half ($1\frac{1}{2}$) inch dressed board having beaded edge, and finish steps in a first class manner.

The eaves to be finished with board and wooden gutter as elsewhere described for the main roof.

All to be well built, and the junction with front gable to be flashed and made water-tight.

The floor at the inner edge to be seven (7) inches below the top of the left corner, and to have a drop of three (3) inches outwards, to shed water.

PORTE COCHIERE.

Build the porte cochiere at the rear of the building, as shown on plans, and of the same general dimensions of lumber &c., as described for the front piazza.

Finish the ridge of the roof with cresting, and finish as shown on plans.

PLUMBING.

Provide materials and fit up a water-closet under the stairs, where shown on plans. It must be neat cabinet work and wainscotted.

A "Demorest hygia cistern water-closet" with enameled cast-iron slop safe, or one equally as good, which the agent in charge shall decide, shall be provided and set with two and one-half ($2\frac{1}{2}$) inch ventilating shaft of cast-iron, carried through the roof sixteen (16) inches. Flash and make water-tight around the pipe where it passes through the roof.

Provide and place a four-inch soil pipe with trap from the closet, and carry same, with sufficient fall to insure perfect drainage, through a proper trench to a point one hundred (100) feet from the building to a stone vault to be constructed to receive the drainage. Make the necessary water connections with supply pipe from hatchery. Provide and set neat enameled cast-iron wash-basin where shown on plans of main floor; inclose same in cabinet-work with panelled doors opening both into hatching-room and to office, as there shown. Make proper water connection with supply-pipe from hatchery, and connect the waste-pipe to the soil-pipe from the water-closet.

Provide proper trap for the waste-pipe.

The basin and faucets must be first class and satisfactory to the agent in charge.

Provide trap door in sleeping-room to the space below the floor.

Provide trap door in ceiling of attic room.

Provide scuttle in the roof of rear addition and proper ladder for reaching same.

PLASTERING.

Plaster, and lath and plaster all the walls of the lower story and attic room, excepting when wainscoted. The ceilings of the first story will not be plastered, but finished in wood as above described. All plastering of partitions to extend down to the floor and not stop at top of baseboard.

Lath and plaster the attic room throughout and provide eight (8) inch baseboards for the same.

LATHS.

The laths to be of the best quality, sawed, and without knots or black sap.

MORTAR.

The mortar to be used is to be made of the best quality lime, hair, and coarse, sharp grit sand, to be well mixed and tempered, evenly spread and well troweled so as to make good clinches, and so that the first coat shall be one-fourth ($\frac{1}{4}$) inch over the

laths. When the first coat is dry put on a coat of lime and moderately fine sand, spread evenly and floated, the surface to be even but what is known as sand finish, fit for painting. This coat is to be tinted or colored so as to be a very light brown tint, instead of white.

PAINTING.

Paint all the outside wood-work with three good coats of pure white lead and pure linseed oil well mixed and of such three colors as shall be directed.

No spirits of turpentine, naphtha, benzine, or similar materials to be used on any of the outside work. Putty all nail-holes, cracks, etc., thoroughly before painting.

All the inside wood finish of the building will be left its natural color and will have one coat of boiled oil and one of shellac varnish.

The mouldings of the wainscoting, ceiling, doors, etc., will be given a coat of stain before oiling and varnishing if so directed by the agent in charge.

All the interior wood-work is to be thoroughly cleaned before oiling from lime and dirt.

Plane the down-stairs floors and give them two coats of oil.

COMBING AND CRESTING.

Provide and set the combing and cresting of galvanized iron, for ridges and peaks of roof, as shown on plans.

FLAG POLE.

Provide and set a flag pole of the size indicated, with wrought-iron supports as shown on plan, where the pole passes through the roof flashings are to be provided. The points of the compass and finial to be wrought iron gilded.

DOWN SPOUTS.

Provide and put up proper tin down spouts $2\frac{1}{2}$ inches diameter, with suitable lead connecting goose-necks 2 inches diameter to the wooden gutters.

LIGHTNING-RODS.

Provide and put up proper lightning-conductors, with branches, copper points, and proper ground connections.

Set branch to each chimney.

Insulate the conductors properly.

GONG-BELL.

Provide and set a gong-bell at front door.

VAULT.

Build a stone vault with dry wall at a point to be chosen by the agent in charge, about one hundred (100) feet from the building, eight (8) by eight (8) feet in size, and ten (10) feet deep.

Provide a proper wooden cover for the vault, with top hinged for easy access.

Make connection to the vault with the soil-pipe from the house.

GENERAL CLAUSE.

The foregoing specifications and accompanying plans are intended to express all that is necessary to enable the U. S. Fish Commission to have built of the best materials and in a thorough and workmanlike manner the house there shown and described. The contractor is to do all such things which are usual and common in buildings of this class and description and which are necessary to its completion, whether they be fully expressed or called for or not. The house shall be complete in all respects and ready for occupancy when the contractor is ready to deliver the building to the Government, and will not be accepted otherwise.

GUARANTY.

We, Joseph S. Reef, of Leadville, in the State of Colorado, and Albert Sherwin, of Leadville, in the State of Colorado, hereby guarantee and bind ourselves, and each of us, our and each of our heirs, executors, and administrators, to the effect that, if

the bid of L. G. Hunt, herewith accompanying, dated Sept. 13th, 1889, for building fish hatchery near Leadville, Colorado, shall be accepted in whole or in part within sixty (60) days from the date of the opening of proposals, the said bidder will within five (5) days after being notified of such acceptance enter into a contract with the United States, in accordance with the terms and conditions of the specifications, and will give bond with good and sufficient sureties for the faithful and proper fulfillment of the same. And in case the said bidder shall fail to enter into contract within the said (5) days with the proper officer of the United States and furnish good and sufficient bond for the faithful performance of the same, in accordance with the terms of said bid and specifications, we and each of us hereby stipulate and guarantee, and bind ourselves, and each of us, our and each of our heirs, executors, and administrators, to pay unto the United States the difference in money between the amount of the bid of said bidder and the amount for which the proper officer of the United States may contract with another party for the work covered by the said bid, if the latter amount be in excess of the former for the whole period covered by the proposal, not exceeding the sum of fifteen hundred dollars (\$1,500.00).

JOSEPH S. REEF. [SEAL.]

ALBERT SHERMAN. [SEAL.]

Witnesses:

JOHN A. EWING.

J. A. DEAN.

Dated Sept. 13th, 1890. Executed in duplicate.

JUSTIFICATION OF THE GUARANTORS.

STATE OF COLORADO, *County of Toke, ss.:*

I, Joseph S. Reef, one of the guarantors named in the within guarantee, do hereby swear that I am pecuniarily worth the sum of one thousand five hundred (\$1,500.00) dollars, over and above all my debts and liabilities.

JOSEPH S. REEF.

Subscribed and sworn to before me, Geo. S. Phelps, commissioner of the circuit court of the United States for the district of Colorado.

[SEAL.]

GEO. S. PHELPS,

Commissioner of the circuit court of the United States for the district of Colorado.

STATE OF COLORADO, *County of Toke, ss.:*

I, Albert Sherwin, one of the guarantors named in the within guarantee, do hereby swear that I am personally worth the sum of one thousand five hundred dollars (\$1,500.00) over and above all my debts and liabilities.

ALBERT SHERWIN.

Subscribed and sworn to before me, Geo. S. Phelps, commissioner of the circuit court of the United States for the district of Colorado.

[SEAL.]

GEO. S. PHELPS,

Commissioner of the circuit court of the United States for the district of Colo.

CERTIFICATE.

I, Geo. S. Phelps, do hereby certify that Joseph S. Reef and Albert Sherwin, the guarantors above named, are personally known to me, and that to the best of my knowledge and belief each is pecuniarily worth over and above all his debts and liabilities, the sum stated in the accompanying affidavit subscribed by him.

[SEAL.]

GEO. S. PHELPS,

Commissioner of the circuit court of the United States for the district of Colorado.

Contract for building a fish hatchery for the U. S. Fish Commission near Leadville, Colorado.

This agreement made and entered into this 14th day of October, in the year eighteen hundred and eighty-nine, A. D., by and between Marshall McDonald, United States Commissioner of Fish and Fisheries, for and in behalf of the United States of America, of the first part, and Lyman G. Hunt, of Leadville, Colorado, contractor, of the second part.

Witnesseth, That the said party of the second part has agreed, and by these presents does agree, with the said party of the first part, for the consideration hereinafter mentioned and contained, and in accordance with his proposal of the thirteenth day of September, 1889, and with the specifications and plans thereto annexed, and under the penalty expressed in a bond bearing even date with these presents, and hereto annexed, all of which form a part of this contract, to furnish at his own cost and expense all the necessary materials and labor to construct and complete, ready for use, in a good and first-class manner, the entire fish-hatchery building including masonry and carpentering, plumbing, painting, and concreting of floor, with all necessary gutters and pipes complete that may be needed in and for the construction of the proposed fish hatchery near Leadville, Colorado, for the sum of twelve thousand six hundred and seventy-two dollars (\$12,672.00).

The said party of the second part, for and in behalf of the United States of America, hereby agrees to pay to the said party of the second part the sum of twelve thousand six hundred and seventy-two dollars (\$12,672.00) when the same shall become due him in accordance with the terms of this contract.

In witness whereof, the parties of these presents have hereunto set their hands and seals the day and date hereinbefore first written.

THE UNITED STATES OF AMERICA,
By MARSHALL McDONALD,
United States Commissioner of Fish and Fisheries.
LYMAN G. HUNT,
Contractor.

Signed, sealed, and delivered in the presence of J. J. O'Connor and Edward Hayes as to Marshall McDonald; John A. Ewing and John H. Kory as to Lyman G. Hunt.
(Executed in triplicate.)

BOND OF INDEMNITY.

Know all men by these presents, That we, Lyman G. Hunt, of Leadville, Colorado, as principal, and Albert Sherwin, of Leadville, Colorado, Emmet Nuckolls, of Leadville, Colorado, as sureties, are held and firmly bound unto the United States of America in the sum of twelve thousand six hundred and seventy-two dollars (\$12,672.00), lawful money of the United States of America, to be paid to the said United States of America, for which payment well and truly to be made, we bind ourselves, our heirs, executors and administrators, jointly and severally, firmly by these presents.

Sealed with our seals and dated the 14th day of October, eighteen hundred and eighty-nine.

Whereas, the said Lyman G. Hunt has entered into a contract with the United States of America, by the United States Commissioner of Fish and Fisheries, bearing date on the 14th day of October, eighteen hundred and eighty-nine, for the construction of a fish-hatchery building near Leadville, Colorado.

Now, the condition of this obligation is such that if the said Lyman G. Hunt shall well and truly keep and perform all the terms and conditions of said contract to be kept and performed on his part, and shall indemnify and save harmless the said United States of America as therein stipulated, then this obligation to be of no effect, otherwise to remain in full force and virtue.

LYMAN G. HUNT.
ALBERT SHERWIN.
EMMET NUCKOLLS.

Signed and sealed in the presence of—
JOHN A. EWING, *Leadville, Colorado.*
JOHN H. KORTY, *Leadville, Colo.*
DANIEL SAYER, *Leadville, Colorado.*

JUSTIFICATION OF GUARANTORS.

STATE OF COLORADO, *county of Lake, ss:*

I, Albert Sherwin, of Leadville, Colorado, one of the guarantors named in the foregoing bond of indemnity, do hereby swear that I am worth the sum of twelve thousand six hundred and seventy-two dollars (\$12,672.00) over and above all my just debts and liabilities, for any cause whatever, to the best of my knowledge and belief.

ALBERT SHERWIN.

Subscribed and sworn to before me this 14th day of October, A. D. 1889.

GEO. S. PHELPS,

*Commissioner of the Circuit Court of the United States for the District of Colorado.*STATE OF COLORADO, *County of Lake, ss:*

I, Emmet Nuckolls, of Leadville, Colorado, one of the guarantors named in the foregoing bond of indemnity, do hereby swear that I am worth the sum of twelve thousand six hundred and seventy-two dollars over and above all my just debts and liabilities for any cause whatever to the best of my knowledge and belief.

EMMET NUCKOLLS.

Subscribed and sworn to before me, this 14th day of October, A. D., 1889.

GEO. S. PHELPS,

Commissioner of the Circuit Court of the United States for the District of Colorado.

I certify that the above-named sureties are personally well known to me, and that they are sufficient for the penalty indicated in the foregoing bond.

GEO. S. PHELPS,

*Commissioner of the Circuit Court of the United States for the District of Colorado.*LEADVILLE, COLORADO, *January 14th, 1890.*

We, the undersigned contractors for building a fish hatchery near Leadville, Colorado, for the uses of the United States Fish Commission, in consideration of being allowed to use in the construction of said fish hatchery certain lumber which has been "stained or discolored" by stormy weather while in transit, and thereby rendered unsuitable for "natural wood" inside finish, as provided for by the specifications for the said fish hatchery, do hereby agree to paint the inside wood-work of said fish hatchery a proper body color and to grain the same in imitation of oak.

It is understood and acknowledged by us that the said change in the finish of the interior of said building is made for our benefit and at our request, and any additional expense involved in said change is to be borne by ourselves.

LYMAN G. HUNT,

Contractors.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States to Thos. L. Darby, P. O. Box No. 143, Dr.

1889.

July 2. To making survey and staking, and preparing map of U. S. fishery reservation, Lake County, Colorado. (Job)..... \$211.35

Received at Leadville, Colo., of Herbert A. Gill, disbursing agent U. S. Fish Commission, this 16th day of July, 1889, two hundred and eleven dollars thirty-five cents, in full of the above account.

\$211.35.

THOS. L. DARBY.

[Indorsement on back.]

No. 1. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colo. Date of account, July 2, 1889; name, Thos. L. Darby; amount, \$211.35; when paid, July 16, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered]. The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—John Gay.

Approved.—Richard Rathbun, Acting U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States to Wyckoff, Seamans & Benedict, Le Droit Building, Dr.

July 16, 1889. To furnishing twenty (20) copies of specifications for fish hatchery at Leadville, Colorado—35 pages..... \$35.00

Received at Washington, D. C., of Herbert A. Gill, disbursing agent U. S. Fish Commission, this 19th day of July, 1889, thirty-five dollars ——— cents, in full of the above account.

\$35.00.

WYCKOFF, SEAMANS & BENEDICT,
By J. R. BUCKELEW,

Attorney.

[Indorsement on back.]

No. 2. U. S. Commission of Fish and Fisheries, fish hatchery, Lake County, Colorado. Date of account, July 16, 1889; name, Wyckoff, Seamans & Benedict; amount, \$35.00; when paid, July 19, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered.] The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Herbert A. Gill.

Approved.—Richard Rathbun, Acting U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States to John Gay, Dr.

Acct. construction of Colorado station.

1889.

July 5.	For railroad fare from Duluth, Minn., to Omaha, Neb.....	\$15.00
	For dinner at Spooner, Wis.....	.50
	For supper on train.....	.75
	For sleeper from St. Paul to Omaha.....	2.00
6.	For breakfast at Omaha.....	.75
	For baggage at Omaha.....	.50
	For sleeper from Omaha to Denver.....	3.50
	For dinner on train.....	.75
	For supper on train.....	.75
7.	For cab and baggage, Denver, Colo.....	.50
8.	For hotel, Denver, Colo.....	5.25
	For cab and baggage, Denver, Colo.....	.50
	For sleeper, Denver to Leadville.....	2.00
9.	For B. .75, D. .75, and S. .75, Leadville.....	2.25
10.	For B. .75, D. .50, and S. .50, Leadville.....	1.75
11.	For B. .50, D. .75, and S. .50, Leadville.....	1.75
12.	For B. .55, D. .75, and S. .60, Leadville.....	1.90
	For lodging, 9th, 10th and 11th inst., Leadville.....	3.00
	For sleeper, Leadville to Denver.....	2.00
13.	For cab, Denver.....	.25
15.	For hotel, Denver.....	6.75
	For street car tickets, Denver.....	.50
	For baggage, Denver.....	.50
16.	For hotel, Manitou, Colo.....	3.00
	For supper, Leadville, Colo.....	.65
	For baggage, Leadville, Colo.....	.50
17.	For B. .50, D. and S., 50, Leadville, Colo.....	1.00
18.	For B. .50, D. 50, and S. .75, Leadville, Colo.....	1.75
19.	For B. .50, D. 75, and S. .75, Leadville, Colo.....	2.00
20.	For B. .65, Glenwood Springs, Colo.....	.65
21.	For B. .75 and S. .75, Glenwood Springs, Colo.....	1.50
	For lodging, 19th and 20th inst., Glenwood Springs, Colo.....	1.50
	For S. .75, Leadville, Colo.....	.75
	For sleeper, Leadville to Denver.....	2.00
22.	For B. D. .75, and S. .75, Denver, Colo.....	1.50
23.	For B. .50, and D. .50, on railroad, Colorado.....	1.00
24.	For hotel, Colorado Springs, Colo.....	3.00
	For cab, Colorado Springs, Colo.....	.50
	For parlor car, Colorado Springs to Leadville, Colo.....	1.00
	For D. .50, and S. .75, on railroad.....	1.25
25.	For B. .50, and D. .40, Leadville, Colo.....	.90
26.	For hotel, Twin Lakes, Colo.....	2.50
	For supper, Leadville.....	.35
27.	For B. .45, D. .50, and S. .45; Leadville, Colo.....	1.40
28.	For B. .50, D. .50, and S. .50; Leadville, Colo.....	1.50
29.	For B. .55, D. .40, and S. .50; Leadville, Colo.....	1.45
30.	For B. .55, D. .50, and S. .50; Leadville, Colo.....	1.55

1889.	
July 31. For B. 50, D. 35, Leadville, Colo.....	\$0. 85
For rent of room, Leadville, Colo	10. 66
For notary fee	. 25
	\$98. 36

Received at Leadville, Colo., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 6th day of August, 1889, ninety-eight dollars thirty-six cents, in full of the above account.

\$98.36.

JOHN GAY.

[Indorsement on back.]

No. 3. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colo. Date of account, July 31, 1889. Name, John Gay. Amount, \$98.36. When paid, Aug. 6, 1889.

Correct: Herbert A. Gill, examiner.

I hereby certify that the articles mentioned were delivered, services mentioned were rendered, and the charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—John Gay.

Approved: Richard Rathbun, Acting U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States to The Republican Pub'g Co., Dr.

July 31, 1889. To advertising proposals for construction of fish hatchery near Leadville, Colorado, in the Denver Republican, issues of July 16, 18, 20, 22, 24, 26, 29, and 31, 1889, 1½ sq., 8 times..... \$6.75

Received at Denver, Colorado, of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 20th day of August, 1889, six dollars seventy-five cents, in full of the above account.

\$6.75.

THE REPUBLICAN PUB. CO.,
By K. L. COOPER,

Treasurer.

[Indorsement on back.]

No. 4. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colo. Date of account, July 31, 1889; name, The Republican Pub. Co.; amount, \$6.75; when paid, Aug. 20, 1889.

Correct.—H. A. Gill, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered]. The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Herbert A. Gill.

Approved.—Richard Rathbun, Acting U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States to The Times Company, Dr.

July 31, 1889. To advertising in the Denver Times, proposals for the construction of a fish hatchery; issues of July 16, 18, 20, 22, 24, 26, 29, and 31, 1889, 2 squares, 8 times..... \$16.00

Received at Denver, Col., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 21st day of August, 1889, sixteen dollars ——— cents, in full of the above account.

\$16.00.

THE TIMES CO.,
W. H. GRIFFITHS,
Prest. and Manager.

[Indorsement on back.]

No. 5. U. S. Commission of Fish and Fisheries, fish hatchery Lake Co. Colo. Date of account, July 31, 1889; name, The Times Co.; amount, \$16.00; when paid, August 21, 1889.

Correct.—H. A. Gill, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered]. The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Herbert A. Gill.

Approved.—Richard Rathbun, acting U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States to Wm. P. Sauerhoff, Dr.

Traveling expenses from Washington, D. C., to Leadville, Colo.
1889.

Aug. 1. Sleeping car from Washington, D. C., to St. Louis, Mo.....	\$5.00
1. Supper, Cumberland, Md.....	.75
2. Breakfast, Cincinnati, Ohio.....	.75
2. Dinner, Vincennes, Indiana.....	.50
2. Supper, St. Louis, Mo.....	.75
2. Sleeping car from St. Louis, Mo., to Denver, Colo.....	5.50
3. Breakfast, Kansas City, Kansas.....	.75
3. Dinner, Topeka, Kansas.....	.75
3. Supper, Newton, Kansas.....	.75
4. Breakfast, La Junta, Colo.....	.75
4. Dinner, Denver, Colo.....	1.00
4. Supper, Denver, Colo.....	.75
4. Sleeping car from Denver to Leadville, Colo.....	2.00
5. Breakfast, Leadville, Colo.....	.65
5. Notary fee.....	.25
	20.90

Received at Leadville, Colo., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 21st day of August, 1889, twenty dollars ninety cents, in full of the above account.

\$20.90.

WM. P. SAUERHOFF.

[Indorsement on back.]

No. 6. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co. Colo. Date of account, July 5, 1889; name, Wm. P. Sauerhoff; amount, \$20.90; when paid, Aug. 21, 1889.

Correct.—H. A. Gill, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—Wm. P. Sauerhoff.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—John Gay.

Approved.—Richard Rathbun, acting U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States to C. E. Gorham, Dr.

July 1, 1889. For plans and specifications for a fish hatchery near Leadville,
Colorado..... \$175.00

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 29th day of August, 1889, one hundred and seventy-five dollars ———
cents, in full of the above account.

\$175.00.

C. E. GORHAM.

[Indorsement on back.]

No. 7. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colorado. Date of Account, July 1, 1889; name, C. E. Gorham; amount, \$175.00; when paid, Aug. 29, 1889.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered], and the charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—M. McDonald.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States to C. C. Davis & Co., Dr.

Aug. 6, 1889. To publishing advertisement calling for proposals for construction of fish hatchery near Leadville, Colorado, in the Leadville Herald-Democrat, issues of July 17, 19, 21, 24, 26, 28, 31, and Aug. 3, 4, and 6, 1889 \$5.75

Received at Leadville, Colo., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 4th day of September, 1889, five dollars seventy-five cents, in full of the above account.

\$5.75.

C. C. DAVIS & Co.

[Indorsement on back.]

No. 8. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colo. Date of account, Aug. 6, 1889; name, C. C. Davis & Co.; amount, \$5.75; when paid, Sept. 4, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered]. The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Herbert A. Gill.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States to C. C. Davis & Co., Dr.

Aug. 7, 1889. To publishing advertisement calling for proposals for construction of fish hatchery near Leadville, Colorado, in the Leadville Chronicle, issues of July 17, 19, 22, 24, 26, 29, 31, and Aug. 3, 5, and 7, 1889 \$5.75

Received at Leadville, Colo., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 4th day of Sept., 1889, five dollars seventy-five cents, in full of the above account.

\$5.75.

C. C. DAVIS & Co.

[Indorsement on back.]

No. 9. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colo. Date of account, Aug. 7, 1889; name, C. C. Davis & Co.; amount, \$5.75; when paid, Sept. 4, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered]. The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Herbert A. Gill.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States to Rocky Mountain News Printing Co., Dr.

July 31, 1889. To advertising proposals for construction of fish hatchery, Leadville, Colorado, in the Rocky Mountain News, editions of July 16, 18, 20, 22, 24, 26, 29, and 31, 1889..... \$6.30

Received at Denver, Colo., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 4th day of September, 1889, six dollars thirty cents, in full of the above account.

\$6.30.

THE ROCKY MOUNTAIN NEWS PTG. CO.,
JOHN ARKINS,
Treasurer.

[Indorsement on back.]

No. 10. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colo. Date of account, July 31, 1889; name, Rocky Mountain News Printing Co.; amount, \$6.30; when paid, Sept. 4, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered]. The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Herbert A. Gill.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE COUNTY COLO.

The United States to William P. Sauerhoff, Dr.

1889.

Aug. 31. To services in charge of construction of Hatchery at Leadville, Col., during the month of August, 1889..... \$125.00

Received at Leadville, Colo., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 14th day of September, 1889, one hundred and twenty-five dollars ——— cents, in full of the above account.

\$125.00.

WM. P. SAUERHOFF.

[Indorsement on back.]

No. 11. U. S. Commission of Fish and Fisheries, fish hatchery, Lake County, Colo. Date of account, Aug. 31, 1889; name, William P. Sauerhoff; amount, \$125.00; when paid, Sept. 14, 1889.

Correct—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—William P. Sauerhoff.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—John Gay.

Approved, M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE COUNTY, COLO.

The United States to John Gay, Dr.

Account construction Colorado Station:

1889.

Aug. 1.	For B. .50; D. .50; S. .50; Leadville, Colo.....	\$1.50
2.	For B. .50; D. .35; S. .60; Leadville, Colo.....	1.45
3.	For B. .50; D. .30; S. .60; Leadville, Colo.....	1.40
4.	For B. .50; D. .75; S. .60; Leadville, Colo.....	1.85
5.	For B. .20; D. .40; S. .35; Leadville, Colo.....	.95

1889.

Aug. 6.	For B. .45; D. .50; S. .50; Leadville, Colo.....	\$1.45
	For Sleeper, Leadville to Denver, Colo.....	2.00
7.	For B. .75; D. .75; S. .75; Denver, Colo.....	2.25
8.	For B. .75; D. .75; S. .75; Denver, Colo.....	2.25
	For sleeper, Denver to Leadville Colo.....	2.00
9.	For B. .75; D. .50; S. .60; Leadville, Colo.....	1.85
	For J. H. Van Camp, livery hire.....	4.00
10.	For B. .50; D. .35; S. .50; Leadville, Colo.....	1.35
	For Telegram for'd from Leadville to Denver.....	.28
11.	For B. .50; D. .60; S. .60; Leadville, Colo.....	1.70
12.	For B. .50; Leadville, Colo.....	.50
	For fare, Leadville to Evergreen Lakes, Colo.....	.75
14.	For hotel, Evergreen Lakes, Colo.....	4.38
15.	For B. .70; D. .30; S. .35; Leadville, Colo.....	1.35
16.	For B. .60; D. .45; S. .55; Leadville, Colo.....	1.60
17.	For hauling Sauerhoff's chest to Evergreen Lakes.....	.50
	For B. .50; D. .50; S. .50; Leadville.....	1.50
	For telegram to M. McDonald, Duluth, Minn., from Leadville (96 words).....	.96
18.	For B. .50; D. .20; S. .45; Leadville.....	1.15
19.	For B. .60; D. .50; S. .50; Leadville.....	1.60
	For telegram to M. McDonald, Duluth, Minn., from Leadville (45 words).....	.45
20.	For B. .50; D. .50; S. .50; Leadville.....	1.50
21.	For B. .50; D. .35; S. .50; Leadville.....	1.35
	For sleeper, Leadville to Denver, Colo.....	2.00
22.	For B. .80; D. .75; S. .75; Denver, Colo.....	1.55
24.	For hotel, Denver, Colo.....	5.25
	For parlor car, Denver to Leadville.....	1.25
	For D., 75; S., 75, Leadville.....	1.50
25.	For B., 50; D., 50, Leadville.....	1.00
25.	For D., 50; S., 50, Leadville.....	1.00
27.	For B., 50; D., 50; S., 50, Leadville.....	1.50
28.	For B., 50; D., 50; S., 70, Leadville.....	1.70
29.	For B., 50; D., 75; S., 75, Leadville.....	2.00
	For omnibus, Glenwood Springs, Colo.....	.50
30.	For B., 75; D., 75; S., 75, Glenwood Springs, Colo.....	2.25
31.	For B., 60; D., 50; S., 50, Glenwood Springs, Colo.....	1.60
	For hotel, room, Glenwood Springs, Colo.....	1.50
	For rubber stamps, Leadville, Colo.....	.55
	For rent of room, Leadville, Colo.....	20.00
	For R. J. Davison, livery hire, Leadville, Colo.....	3.00
	For notary fee.....	.25
		92.27

Received at Leadville, Colo, of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 21st day of September, 1889, ninety-two dollars twenty-seven cents, in full of the above account.

\$92.27.

JOHN GAY.

[Indorsement on back.]

No. 12. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colo. Date of account, Aug. 31, 1889; name, John Gay; amount, \$92.27; when paid, Sept. 21, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered] and the charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—John Gay.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States to Adams Express Co., Dr.

Aug. 1, 1889. To freight on 1 chest tools from Washington, D. C., to Leadville,
 Colo..... \$16.00

Received at Washington, D. C., of Herbert A. Gill, disbursing agent U. S. Fish Commission, this 24th day of September, 1889, sixteen dollars — cents, in full of the above account.

\$16.00.

ADAMS EXPRESS CO.,
 G. W. Moss,
Agent.

[Indorsement on back.]

No. 13. U. S. Commission of Fish and Fisheries, Fish Hatchery, Lake Co., Colo. Date of account, Aug. 1, 1889; name, Adams Express Co.; amount, \$16.00; when paid, Sept. 24, 1889.

Correct—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—S. G. Worth.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—S. G. Worth.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO. COLO.

The United States to E. M. Robinson, Dr.

Sept. 30, 1889. To services as Superintendent Leadville Hatchery, Colorado,
 from September 21st-30th, 1889, inclu. $\frac{1}{2}$ mo. at \$125.....\$41.66

Received at Leadville, Colo., of Herbert A. Gill, Disbursing Agent, U. S. Fish Commission, this 30th day of September, 1889, Forty-one dollars sixty-six cents, in full of the above account.

\$41.66.

E. M. ROBINSON.

[Indorsement on back.]

No. 14. U. S. Commission of Fish and Fisheries, Fish hatchery, Lake Co. Colo. Date of account, Sept. 30, 1889; name, E. M. Robinson; amount, \$41.66; when paid, Sept. 30, 1889.

Correct—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—E. M. Robinson.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—John Gay.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States to William P. Sauerhoff, Dr.

Sept. 30, 1889. To services in charge of construction of hatchery at Leadville,
 Colorado, during the month of September, 1889..... \$125.00

Received at Leadville, Colorado, of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 30th day of September, 1889, one hundred and twenty-five dollars — cents, in full of the above account.

\$125.00.

WILLIAM P. SAUERHOFF.

[Indorsement on back.]

No. 15. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colo. Date of account, Sept. 30, 1889; name, William P. Sauerhoff; amount, \$125.00; when paid, Sept. 30, 18-9.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—William P. Sauerhoff.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—John Gay.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

United States to John Gay, Dr.

Acct. construction of fish hatchery in Lake County, Colorado:

1889.		
Aug. 31.	For cash paid H. P. Michaelson per voucher	\$2.50
	For cash paid J. R. Pitts per voucher	16.25
	For cash paid Ben Swansen per voucher	5.00
	For cash paid Daniel Sheridan per voucher	9.38
	For cash paid W. W. Dickey per voucher	37.50
		70.63

Received at Leadville, Colo., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 30th day of September, 1889, seventy dollars sixty-three cents, in full of the above account.

\$70.63.

JOHN GAY,

[Indorsement on back.]

No 16. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colo. Date of account, Aug. 16th, 1889; name, John Gay; amount, \$70.63; when paid, Sept. 30, 1889.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered], and the charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—John Gay.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States to the Republican Publishing Co., Dr.

Sept. 14, 1889.	To advertising proposals for construction of fish hatchery near Leadville, Colorado, in the Denver Republican, issues of Aug. 26, 28, 30, 31, and Sept. 2, 4, 7, 10, 12, and 14, 1889, 1½ squares, 10 times	\$8.25
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Received at Denver, Colorado, of Herbert A. Gill, disbursing agent U. S. Fish Commission, this 10th day of Oct., 1889, eight dollars twenty-five cents, in full of the above account.

\$8.25.

THE REPUBLICAN PUBLISHING CO.
By K. G. COOPER,
Pres. and Gen. M'gr.

[Indorsement on back.]

No. 17. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colo. Date of account, Sept. 14, 1889; name, The Republican Publishing Co.; amount, \$8.25; when paid, Oct. 10, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—A. C. Addison.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States to C. C. Davis & Co., Dr.

1889.

Sept. 14. To publishing advertisement calling for proposals for construction of a fish hatchery, near Leadville, Colorado, in the Leadville Herald-Democrat, issues of Aug. 27, 28, 30, and 31, and Sept. 1, 4, 7, 10, 12, and 14, 1889..... \$5.75

Received at Leadville, Colorado, of Herbert A. Gill, disbursing agent U. S. Fish Commission, this 10th day of Oct. 1889, five dollars seventy-five cents, in full of the above account.

\$5.75.

C. C. DAVIS & Co.

[Indorsement on back.]

No. 18. U. S. Commission of Fish and Fisheries, fish hatchery Lake Co., Colo. Date of account, Sept. 14, 1889; name, C. C. Davis & Co.; amount, \$5.75; when paid, Oct. 10, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—A. C. Addison.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY LAKE CO., COLO.

United States to C. C. Davis & Co., Dr.

1889.

Sept. 14. To publishing advertisement calling for proposals for construction of fish hatchery near Leadville, Colo. in the Leadville Chronicle, issues of Aug. 26, 28, 30, and 31, and Sept. 4, 5, 7, 10, 12, and 14, 1889..... \$5.75

Received at Leadville, Colorado, of Herbert A. Gill, disbursing agent U. S. Fish Commission, this 10th day of Oct., 1889, five dollars seventy-five cents, in full of the above account.

\$5.75

C. C. DAVIS & Co.

[Indorsement on back.]

No. 19. U. S. Commission of Fish and Fisheries. Fish Hatchery, Lake Co., Colo. Date of account, Sept. 14, 1889. Name, C. C. Davis & Co. Amount, \$5.75. When paid, Oct. 10, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—A. C. Addison.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.

Approved—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States to the Times Company, Dr.

1889.

Sept. 14. To advertising in the "Denver Times" proposals for the construction of a fish hatchery, issues of Aug. 26, 28, 30, and 31, and Sept. 2, 4, 9, 10, 12, and 14, 1889; 2 sq. 10 times.....\$20.00

Received at Denver, Colorado, of Herbert A. Gill, disbursing agent U. S. Fish Commission, this 10th day of Oct. 1889, twenty dollars ——— in full of the above account.

\$20.00.

THE TIMES CO.
W. H. GIFFITH,
Prest. and Mngr.

[Indorsement on back.]

No. 20. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co. Colo.

Date of account, Sept. 14, 1889; name, the Times Company; amount, \$20.00; when paid, Oct. 10, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—A. C. Addison.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLORADO.

The United States to Rocky Mountain News Printing Co., Dr.

Sept. 14, 1889. To advertising proposals for construction of fish hatchery, Leadville, Colorado, in the Rocky Mountain News editions of Aug. 26, 28, 30, 31, and Sept. 2, 4, 7, 10, 12, and 14, 1889 \$7.15

Received at Denver, Colorado, of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 12th day of October, 1889, seven dollars fifteen cents, in full of the above account.

\$7.15.

ROCKY MOUNTAIN NEWS PRINTING CO.,
JOHN ARKINS,
Prest. and Treas.

[Indorsement on back.]

No. 21. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colorado. Date of account, Sept. 14, 1889; name, Rocky Mountain News Printing Co.; amount, \$7.15; when paid, Oct. 12, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—A. C. Addison.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLORADO.

The United States to Thomas Lee, Dr.

Sept. 21, 1889. Acct. construction of flumes and temporary hatchery, Colorado Station, for 11½ day' slabor in cleaning out springs and blasting rock from Sept. 9th to 21st, inclusive, at \$3.00 per day..... \$35.25

Received at Leadville, Colo., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 12th day of Oct., 1889, thirty-five dollars twenty-five cents, in full of the above account.

\$35.25.

THOMAS (his x mark) LEE.

Witness:

E. M. ROBINSON,
WM. P. SAUERHOFF,
Leadville, Colo.

[Indorsement on back.]

No. 22. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colorado. Date of account, Sept. 21, 1889; name, Thomas Lee; amount, \$35.25; when paid, Oct. 12, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered], and the charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—John Gay.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE COUNTY, COLORADO.

The United States to W. W. Dickey, Dr.

Oct. 1, 1889. Acct. construction of flumes and temporary hatchery, Colorado Station, for 16½ days' labor from Sept. 12th to Oct. 1st, 1889, inclusive, at \$2.50 per day..... \$41.25

Received at Leadville, Colorado, of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 12th day of Oct., 1889, forty-one dollars twenty-five cents, in full of the above account.

\$41.25.

W. W. DICKEY.

[Indorsement on back.]

No. 23. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colorado; date of account, Oct. 1, 1889; name, W. W. Dickey; amount, \$41.25; when paid, Oct. 12, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered] and the charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—John Gay.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLORADO.

The United States To M. E. Stid, Dr.

Oct. 1, 1889. Acct. construction of flumes and temporary hatchery, Colorado Station. For 15½ days' labor from Sept. 12th to October 1st, 1889, dates inclusive, at \$2.50 per day..... \$38.75

(½ day only Sept. 12, 23, and 24th.)

Received at Leadville, Colo., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 14th day of Oct., 1889, thirty-eight dollars seventy-five cents, in full of the above account.

\$38.75.

M.E. STID.

[Indorsement on back.]

No. 24. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colorado. Date of account, Oct. 1, 1889; name, M. E. Stid; amount, \$38.75; when paid, Oct. 14, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered] and the charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—John Gay.

Approved.—M. McDonald, U. S. Commission of Fish and Fisheries.

ON ACCOUNT OF EXPENSES FISH HATCHERY, LAKE COUNTY, COLORADO.

The United States to C. E. Dickenson, Dr.

Account construction flumes and temporary hatchery, Colorado Station.

1889:

Sept. 6.	Twenty-seven pcs. $\frac{2}{8}$	16 plank	576
6.	Twenty-seven pcs. $\frac{2}{12}$	16 plank	864
7.	Twenty-seven pcs. $\frac{2}{8}$	16 plank	576
7.	Twenty-six pcs. $\frac{2}{12}$	16 plank	832
7.	Twenty-seven pcs. $\frac{2}{8}$	16 plank	576
7.	Twenty-eight pcs. $\frac{2}{12}$	16 plank	896
9.	Thirty pcs. $\frac{2}{8}$	16 plank	640
9.	Thirty pcs. $\frac{2}{12}$	16 plank	960
9.	Thirty pcs. $\frac{2}{8}$	14 plank	560
9.	Thirty pcs. $\frac{2}{12}$	14 plank	840

7,320 ft. at 20.00 \$146. 40

Received at Leadville, Colo., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 16th day of Oct., 1889, one hundred and forty-six dollars and forty cents, in full of the above account.

\$146.40.

C. E. DICKENSON.

[Indorsement on back.]

No. 25. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Col. Date of account, Sept. 9, 1889; name, C. E. Dickinson; amount, \$146.40; when paid, Oct. 16, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered] and the charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—John Gay.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES FISH HATCHERY, LAKE CO., COLORADO.

The United States to Eaton & Cary, Dr.

Acct. construction of flumes and temporary hatchery at Colorado			
1889. Station:			
Aug. 7.	10 pounds giant powder, 25c		\$2. 50
10.	1 box caps		70
	100 feet fuse		70
13.	100 feet fuse		70
	25 pound giant powder, 22c		5. 50
Sept. 7.	2 kegs 20d nails, \$4.50		9. 00
9.	1 keg 10d nails		4. 60
	1 keg 8d nails		4. 75

1889.		
Sept. 9.	50 pounds 20d nails, 6c.....	\$3.00
	40 pounds 6d nails 6c.....	2.40
	25 pounds 4d nails, 7c.....	1.75
		35.60

Received at Leadville, Colo., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 16th day of Oct., 1889, thirty-five dollars and sixty cents, in full of the above account.

\$35.60.

EATON & CARY.

[Indorsement on back.]

No. 26. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colorado, date of account, Sept. 9, 1889; name, Eaton & Cary; amount, \$35.60; when paid, Oct. 16, 1889.

Correct—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered], and the charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—John Gay.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES FISH HATCHERY, LAKE COUNTY, COLO.

The United States to William C. Dimick, Dr.

Account construction of flumes and temporary hatchery, Colorado Station.

1889.		
Oct. 5.	For 18½ days carpenter work, from Sept. 12th to Oct. 5th, 1889, at \$3.50 per day.....	\$65.62

Received at Leadville, Colo., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 18th day of Oct., 1889, sixty-five dollars and sixty-two cents, in full of the above account.

\$65.62.

W. C. DIMICK.

[Indorsement on back.]

No. 27. U. S. Commission of Fish and Fisheries, fish hatchery, Lake County, Colo. Date of account Oct. 5, 1889; name, William C. Dimick; amount, \$65.62; when paid, Oct. 18, 1889.

Correct—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered], and the charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—John Gay.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES FISH HATCHERY, LAKE CO., COLORADO.

The United States to D. A. Crisple, Dr.

1889.	Acct. construction of flumes and temporary hatchery, Colorado Station.	
Oct. 5.	For 18 days' carpenter work from Sept. 12th to Oct. 5th, 1889, at \$3.50 per day.....	\$63.00

Received at Leadville, Colo., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 18th day of Oct., 1889, sixty-three dollars, in full of the above account.

\$63.00.

D. A. CRISPLE.

[Indorsement on back.]

No. 28. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colorado. Date of account, Oct. 5, 1889; name, D. A. Crisple; amount, \$63.00; when paid, Oct. 18, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered], [services mentioned were rendered], and the charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—John Gay.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE COUNTY, COLORADO.

The United States to G. W. Woodard, Dr.

Acct. Construction of, Flumes and Temporary Hatchery, Colorado Station.

Oct. 5. 1889. For 22 days Carpenter work from Sept. 10th to Oct. 5th, 1889, at \$3.50 per day..... \$77.00

Received at Leadville, Colo., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 18th day of Oct., 1889, seventy-seven dollars, in full of the above account. \$77.00

GEO. W. WOODARD.

[Indorsement on back.]

No. 29. U. S. Commission of Fish and Fisheries, Fish Hatchery Lake County, Colorado. Date of account Oct. 5, 1889; name, G. W. Woodard; amount, \$77.00; when paid, Oct. 18, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered] and the charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—John Gay.

Approved.—M. McDonald, U. S. Commission of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLORADO.

The United States to Baltimore and Ohio R. R. Co., Dr.

July 31, 1889. To transportation of Wm. P. Sauerhoff, from Washington, D. C., to Leadville, Colorado. (B. 807.....) \$51.00

Received at Baltimore, Md., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 22d day of Oct., 1889, fifty-one dollars, in full of the above account. \$51.00

B. & O. R. R. Co.,
By W. H. JAMS,
Treas'r.

[Indorsement on back.]

No. 30. U. S. Commission of fish and Fisheries, Fish hatchery, Lake Co., Colorado. Date of account, July 31, 1889; name, Balto. and Ohio R. R. Co.; amount, \$51.00; when paid, Oct. 22, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered], [services mentioned were rendered] and the charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLORADO.

The United States to William P. Sauerhoff, Dr.

1889.

Oct. 31. To services in charge of construction of hatchery at Leadville, Colorado, during the month of October, 1889..... \$125.00

Received at Leadville, Colorado, of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 31st day of October, 1889, one hundred and twenty-five dollars, in full of the above account.

\$125.00.

WILLIAM P. SAUERHOFF.

[Indorsement on back.]

No. 31. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colorado. Date of account, Oct. 31, 1889; name, William P. Sauerhoff; amount, \$125.00; when paid, Oct. 31, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—E. M. Robinson.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—E. M. Robinson.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States to Thos. L. Darby, P. O. Box 134, Dr.

1889.

Oct. 30. To staking out U. S. Fish Hatchery on reservation near Leadville, Colorado, giving grades for same, platting same, and temporary building, and lines of flume boxes on contour maps. Job.....\$20.00

Received, at Leadville, Colo., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 19 day of November, 1889, twenty dollars, in full of the above account.

\$20.00.

(Signed)

THOS. L. DARBY.

[Indorsement on back.]

No. 32. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colo. Date of account, Oct. 30, 1889; name, Thos. L. Darby; amount, \$20.00; when paid, Nov. 19, 1890.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered] and the charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—John Gay.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States to John Gay, Dr.

1889. Acct. construction Colorado Station:

Dr.

Sept. 1.	For B. 50; D. 50; S. 50. Leadville, Colo	\$1.50
2.	For B. 50; D. 50; S. 40. Leadville, Colo.....	1.40
	For sleeper, Leadville, to Denver, Colo	2.00
3.	For B. \$1.00; D. \$1.00; S. 75. Denver, Colo	2.75
	For sleeper, Denver to Leadville	2.00
4.	For B. 75; D. 75; S. 75. Leadville, Colo.....	2.25
5.	For B. 45; D. 60, and S. 60. Leadville, Colo	1.65
6.	For B. 50; D. 50, and S. 45. Leadville, Colo	1.45
7.	For B. 50; D. 50; S. 50. Leadville, Colo	1.50

[Indorsement on back.]

No. 34. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colo. Date of account, Nov. 18, 1889; name, Lyman G. Hunt; amount, \$3,788.00; when paid, Nov. 27, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered,] and the charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—E. M. Robinson.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

UNITED STATES COMMISSION OF FISH AND FISHERIES.

Pay-roll of persons employed during the month of November, 1889, on account of Fish Hatchery, Lake County, Colorado.

[Object and place of employment, Leadville, Colorado Station.]

Names.	Nature of services rendered.	Period of time.	Amount of time.	Rate.	Amount.
E. M. Robinson	Superintendent	Nov. 1-30	1 mo. ....	.....	\$125. 00
Wm. P. Sauerhoff	In charge construction	do do	do do	.....	125. 00
					250. 00

We acknowledge to have received of Herbert A. Gill, Disbursing Agent U. S. Fish Commission, the sums annexed to our respective names, in full for services rendered.

E. M. ROBINSON.

WM. P. SAUERHOFF.

[Indorsement on back.]

No. 35. U. S. Commission of Fish and Fisheries; pay-roll fish hatchery, Lake Co., Colo. Date of account, November 30, 1889; name, E. M. Robinson and others; amount, \$250.00; when paid, November 30, 1889.

Correct.—A. C. Addison, examiner.

I certify that the within account is correct; that the services charged therein were required and performed for the object above mentioned, and that the charges for the same are reasonable.—E. M. Robinson.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.—ACCT. CONSTRUCTION OF FLUMES AND TEMPORARY HATCHERY, COLORADO STATION.

The United States to Tomkins Hardware Co., Dr.

1889.

Sept. 23.	390 lbs. tar paper, 4c	\$15. 60
	25 lbs. 20d. wire nails, 7c	1. 75
	3 pr. 3½x3 butts and screws, 25	. 75
	1 door lock	1. 50
	1 door lock	. 50
Sept. 25.	5 lbs. oakum, 16	. 80
	35 lbs. 4d. nails, 6	2. 10
Sept. 26.	10 galls. asphaltum, 1.15	11. 50
	20 oz. Litharge	. 50
	20 oz. dry red lead	. 20
	10 lbs. plaster Paris	. 75
	2 brushes, 75	1. 50
	5 galls. asphaltum, 1.15	5. 75

1889.			
Sept.	26	For 3 lbs. oakum, 16	\$0.48
		For 1 gall. white paint	1.75
		For 1 large paint brush	.75
		For 1 sash brush	.20
		For 1 gall. turpentine and can	1.50
Oct.	4.	For 10 lbs. 16d. wire nails, 7	.70
		For 25 lbs. 10d. common nails, 6	1.50
		For 25 lbs. 8d. common nails, 6	1.50
		For 1 gro. 2 in. 14 screws	1.00
		For 1 doz. molasses gates (faucets)	6.50
Oct.	7.	For 1 paper 14 oz. tacks	.10
		For 10 lbs patty, 8	.80
		For 10 lbs. 6d. finishing nails, 7	.70
		For 1 1-in. iron cock	1.00
		For 23 1½ inch lead pipe, 12	2.76
		For 12 tin tubes 3¼ feet long 2 inch dia., 35	4.20
	10.	For 1 No. 16 Aurora stove	12.00
		For 6 joints pipe	1.80
		For 1 safety roofsafe	3.50
		For 1 No. 7 tea kettle	1.00
		For 4 papers D. P. Tacks	.40
		For 7 yards window screen	2.25
		For 1 coal hod	.75
		For ½ dozen Slein Paper Files	.60
		1 lb. ⅞ copper tacks	.50
			91.44

Received at Leadville, Colo., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 13th day of December, 1889, ninety-one dollars and forty-four cents, in full of the above account.

\$91.44.

THE TOMKINS HARDWARE CO.,
By DAVID LA SALLE, Sec.

[Indorsement on back.]

No. 36. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colo.; date of account, Oct. 10, 1889; name, Tompkins Hardware Co.; amount, \$91.44; when paid, Dec. 13, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [article mentioned were delivered] [services mentioned were rendered] and the charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—John Gay.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States to Lyman G. Hunt, Dr.

1889.

Dec. 6.	To second payment on account of construction of fish-hatchery building near Leadville, Colorado, under contract dated Oct. 14th, 1889, and in accordance with the accompanying certificate and recommendation of the agent of the United States, superintending the construction of the building	\$4,205.00
	Less 20 per centum	841.00
	Amount of contract, \$12,672.00	3,364.00

Received at Pueblo, Colo., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 14th day of December, 1889, thirty-three hundred and sixty-four dollars — cents, in full of the above account.

\$3,364.00.

LYMAN G. HUNT.

[Indorsement on back.]

No. 37. U. S. Commission of Fish and Fisheries, fish-hatchery, Lake Co., Colo. Date of account, Dec. 6, 1889; name, Lyman G. Hunt; amount, \$3,364.00; when paid, Dec. 14, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—E. M. Robinson.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—E. M. Robinson.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States to Dispatch Publishing Co., Dr.

1889.

Aug. 31.	To advertising proposals for construction of fish hatchery, Leadville, Colorado, in "Leadville Dispatch." Editions of July 17, 19, 23, 24, 26, 30, 31; Aug. 1, 2, 3; 14 lines; 10 times.....	\$7.75
Sept. 8.	Re-advertisement editions of Aug. 28, 29, 30, 31, and Sept. 1, 4, 5, 6, 7, 8. 15 lines; 10 times	8.25
		16.00
	By disallowance of one line in re-advertisement (display of word "re-advertisement" not being called for).....	.50
		15.50

Received at Leadville, Colo., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 19th day of Dec., 1889, fifteen dollars and fifty cents, in full of the above account.

\$15.50.

DISPATCH PUB'G CO.,
Per P. S. LEANARD, *Mgr.*

[Indorsement on back.]

No. 38. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colo. Date of account, Sept. 8, 1889; name, Dispatch Publishing Co.; amount, \$15.50; when paid, Dec. 19, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].

The charges in this bill are just and reasonable, and the articles of services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Herbert A. Gill.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States, to Williams Lumber Co., Dr.

1889.

Sept. 24.	To lumber furnished for auxiliary hatchery at Leadville, Colorado, during September, 1889:	
	10,619 ft. lumber, at 20c	\$212.38
	200 ft. B. M. flooring, at \$27.50	5.50
	410 ft. finishing, at 25c	10.25
	1,017 ft. Eastern clear, at 85c	86.44
	220 ft. Eastern clear, at 80c	17.60
	Ripping	4.50
	1 keg 30d nails	4.00
	2 doors, 2 ft. 6 in. x 6 ft. 6 in., 1½ in. thick, at \$2	4.00
	11 windows, 12 x 14, 8-light, at \$2.75	30.25
		374.92

Received at Leadville, Colo., of Herbert A. Gill, disbursing agent U. S. Fish Commission, this 28th day of December, 1889, three hundred and seventy-four dollars ninety-two cents, in full of the above account.

\$374.92.

WILLIAMS LUMBER CO.,
By M. H. WILLIAMS, *Pres't.*

[Indorsement on back.]

No. 39. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colo. Date of account, Sept. 24, 1889; name, Williams Lumber Co.; amount, \$374.92; when paid, Dec. 28th, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered], and the charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—John Gay.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States, to Lyman G. Hunt, Dr.

1890.

Jan. 18. To third payment on account of construction of fish hatchery near Leadville, Colorado, under contract dated Oct. 14th, 1889, and in accordance with the accompanying certificate and recommendations of the agent of the United States superintending the construction of the building.....	\$3,000.00
Less 20 per centum.....	600.00
	2,400.00
Amount of contract	12,672.00
Payment Nov. 27, 1889	\$3,788
Payment Dec. 14, 1889	3,364
Payment Jan., 1890	2,400
	9,552.00
Amount due	3,120.00

Received at Pueblo, Colo., of Herbert A. Gill, disbursing agent U. S. Fish Commission, this 25th day of January, 1890, twenty-four hundred dollars, in full of the above account.

\$2,400.00.

LYMAN G. HUNT.

[Indorsement on back.]

No. 40. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colo. Date of account, Jan. 18, 1890; name, Lyman G. Hunt; amount, \$2,400.00; when paid, Jan. 25, 1890.

Correct.—H. A. Gill, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—E. M. Robinson.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—E. M. Robinson.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States, to Lyman G. Hunt, Pueblo, Colo., Dr.

1890.

Feb. 24.	To fourth payment on account of construction of fish-hatchery building near Leadville, Colorado, under contract dated Oct. 14th, 1889, and in accordance with the accompanying certificate and recommendation of the agent of the United States superintending the construction of the building.....	\$732.00
	Less 20 per centum.....	146.40
		585.60
	Amount of contract.....	12,672.00
	Payment of Nov. 27, 1889.....	\$3,788.00
	Payment of Dec. 14, 1889.....	3,364.00
	Payment of Jan. 25, 1890.....	2,400.00
	Payment of March, 1890.....	585.60
		10,137.60
	Balance due.....	2,534.40

Received at Pueblo, Colorado, of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 8th day of March, 1890, five hundred and eighty-five dollars sixty cents, in full of the above account.

\$585.60.

LYMAN G. HUNT.

[Indorsement on back.]

No. 41. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colo. Date of account, Feb. 24, 1890; name, Lyman G. Hunt; amount, \$585.60; when paid, March 8, 1890.

Correct.—H. A. Gill, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—E. M. Robinson.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—E. M. Robinson.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States, to the Cary Hardware Co., Dr.

1890.

March 13,	To 1 No. 80 Albert stove and furniture	\$27.00
	10 joints 6" pipe, .25.....	2.50
	1 6 x 8 ceiling ventilator.....	.85
	10 pounds zinc, .20	2.00
17.	35 sheets perforated tin, .18.....	6.30
		38.65

Equipment.....	\$32.35
Screens and troughs.....	6.30

Leadville, Colo., Station.

Received at Leadville, Colo., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 16 day of April, 1890, thirty-eight dollars sixty-five cents, in full of the above account.

\$38.65.

THE CARY HARDWARE CO.,
By FAHNESTOCK, Book-keeper.

[Indorsement on back.]

No. 42, U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colo. Date of account, March 17, 1890; name, The Cary Hardware Co.; amount, \$38.65; when paid, April 16, 1890.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—E. M. Robinson.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—E. M. Robinson.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF FISH HATCHERY, LAKE CO., COLO.

The United States to Moynahan & Laughlin, Dr.

1890.		
March 22.	To 3 prs. Cal. blankets, \$7.50	\$22.50
	1 quilt	3.00
	1 "	5.00
	2 mirrors	6.00
		36.50

Equipment, Leadville, Colo. station.

Received at Leadville, Colo., of Herbert A. Gill, disbursing agent U. S. Fish Commission, this 21 day of April, 1890, thirty-six dollars fifty cents, in full of the above account.

\$36.50.

MOYNAHAN AND LAUGHLIN.

[Indorsement on back.]

No. 43. U. S. Commission of Fish and Fisheries, fish hatchery, Lake Co., Colo. Date of account, M'ch 22, 1890; name, Moynahan & Laughlin; amount, \$36.50; when paid, Apr. 21, 1890.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—E. M. Robinson.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—E. M. Robinson.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

The CHAIRMAN. Here are certain vouchers, embracing the fiscal years 1887-1888, 1888-1889, 1889-1890, furnished by Commissioner McDonald.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.

The United States to Robert Leitch & Sons, 1214 and 1216 D St., N. W., Dr.

1887.

Adapting car No. 3 for hatching eggs in transit.

Aug. 30.	To one 1" nipple, .05; one 1" bushing, .04; one 2½" bushing, .21	\$0.30
	one 2½" nipple, .28; six ¼" elbows, .12; two ¼" tees, .06	.46
	one ¼" unions, .08; two 1" × ¾" bushing, .08	.16
	two ¾" × ¼" bushing, .06; two 1" plugs, .10	.16
	one length ¼" pipe, .60; two 1" caps, .10; one ½" nipple, .05	.75
	two ells, .10; two 1" L nuts, .12; one 1" nipple, .10	.32
	two ¼" nipples, .10; one ¾" nipples, .05	.15
	two brass flanges to order	1.15
	four iron brackets	3.25
		6.70

Received at Washington, D. C., of Herbert Gill, disbursing agent, U. S. Fish Commission, this 30th day of September, 1887, six dollars and seventy cents, in full of the above account.

\$6.70.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 467. U. S. Commission of Fish and Fisheries; propagation food fishes, 1888. Date of account, Aug. 30, 1887; name, Robert Leitch & Sons; amount, \$6.70; when paid, Sept. 30, 1887.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—I. S. K. Reeves.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—I. S. K. Reeves.

Approved.—G. B. Goode, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.

The United States to Robert Leitch & Sons, 1214 and 1216 D St., N. W., Dr.

Central Station.

1887.

Sept. 10. To two cutter wheels \$0.60

Repairs car No. 3.

11. two 1½" lock-nuts 14
3¼ lbs. brass castings, \$1.14: two 1½ L .24 1.38

Repairs car No. 2.

13. To four 1" L, .32; three 1" tees, .36; one 2" bushing, .1482
53 ft. 1" pipe, \$3.71; one ½" nipple, .05; two 1" globe-valves, \$2.. 5.76
Ten 1-1¼" L, \$1.20; four 1¼" unions, .92; four 1½" L, .48..... 2.60
four 1" unions, .72; six 1" L, .48; two 1" bushing, .09..... 1.29
ten 1¼ lock-nuts, .60; two 1" 45° L, .30; four 1" nipples, .40..... 1.30
two ¼" unions, .15; two 1¼" tees, .06; one 1½" plug, .07..... .28
two 1" tees, .24; one 3¼ lbs. brass castings, \$3.98 4.22
two ¼" tees, .06; one 1½" plug, .07; two ¼" unions, .1629
two ¼" L, .04; one 2" bushing, 14; ten 1" L, .8098
two ¼" L, .04; two 1½" L, .24; two 1" 45° L, .3058
twelve 1¼" plugs, .72; two 1½" caps, .2092
two 1½" nipples, .30; one 1" bushing, .07..... .37
two ¾" inch valves, \$1.50; four ¾" plugs, .10 1.60
two 1" reducers, .12; four ¾" plugs, 1022
two 1" unions, .34; four 1" nipples, 40..... .74
two ¾" tees, 13; two 1½" globe-valves, \$4; four 1½" nipples, .60 .. 4.73

28.82

Received at Washington, D. C., of Herbert A. Gill, disbursing agent U. S. Fish Commission, this 27th day of October, 1887, twenty-eight dollars eighty-two cents, in full of the above account.

\$28.82.

ROBERT LEITCH & SONS.

[Indorsement on back]

No. 692, U. S. Commission of Fish and Fisheries. Propagation food fishes, 1888. Date on account, September 13, 1887; name, Robert Leitch & Sons; amount, \$28.82; when paid, October 27, 1887.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—I. S. K. Reeves.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.

M. McDonald, chief div. of dist.

Approved.—G. B. Goode, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF PROPAGATION OF FOOD FISHES, 1888.

The United States to Robert Leitch & Sons., Dr.

1887.

Oct. 4. To making four brass supports for rod on top of stove; covered by
requisition for stove..... \$2.15

Received at Washington, D. C., of Geo. H. H. Moore, this 4th day of October, 1887,
two dollars fifteen cents, in full of the above account.

\$2.15.

ROBERT LEITCH & SONS.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.—EXPENSES ON
ACCOUNT OF CAR NO. 2, CARP DISTRIBUTION.*The United States to Geo. H. H. Moore, Dr.*

1887.

Oct. 4. To Robert Leitch & Sons (s. v.) \$2.15

Received at Washington, D. C., of Herbert A. Gill, disbursing agent U. S. Fish
Commission, this 18 day of October, 1887, two dollars fifteen cents, in full of the
above account.

\$2.15.

GEO. H. H. MOORE.

[Indorsement on back.]

No. 600. U. S. Commission of Fish and Fisheries; propagation food fishes, 1888.
Date of account, October 4, 1887; name, Geo. H. H. Moore; amount, \$2.15; when
paid, October 18, 1887.

I hereby certify that the [articles mentioned were delivered] [services mentioned
were rendered].—Geo. H. H. Moore. M. McDonald, chief div. dist.

The charges in this bill are just and reasonable, and the articles or services were
required by the United States Commission of Fish and Fisheries, and the public exi-
gency necessitated their immediate delivery or performance—M. McDonald, chief div.
dist.

Approved.—G. B. Goode, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.

The United States to Robert Leitch & Sons, 1214 etc., D St. N. W., Dr.

1887.

Oct. 28. To 1 set of brass hose fittings, steamer *Fish Hawk*..... \$22.00

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish
Commission, this 16th day of November, 1887, twenty-two dollars, in full of the above
account.

\$22.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 926. U. S. Commission of Fish and Fisheries, Propagation Food Fishes, 1888.
Date of account, Oct. 28, 1887; name, Robert Leitch & Sons; amount, \$22; when paid,
November 16, 1887.

I hereby certify that the [articles mentioned were delivered] [services mentioned
were rendered].—James A. Smith, mate U. S. N. Com'd'g.

The charges in this bill are just and reasonable, and the articles or services were
required by the United States Commission of Fish and Fisheries, and the public
exigency necessitated their immediate delivery or performance.—James A. Smith,
mate U. S. N., Com'd'g.

Approved.—G. B. Goode, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.

The United States, to Robert Leitch & Sons, 1214 D St. N. W., Dr.

1887.

Nov. 1. To repair of pressure pipes and valves for supply of water to carp ponds, Monument lot, Washington, D. C. :	
To 20 feet 2" pressure pipe, 20c	\$4. 00
25 pounds old lead, 6c	1. 50
3 pounds packing, 15c	. 45
7½ days' labor, \$2.50	18. 75
3½ days plumber and helper, \$6	21. 00
2 machinists 3 days (6 days) \$4	24. 00
2 helpers 3 days (6 days) \$2.50	15. 00
4 new stud bolts, 75	3. 00
2 new glands, 2.50	5. 00
1 new stem	3. 75
1 new disc	1. 75
Packing 2 valves	1. 50
Carp ponds	99. 70

Received at Washington, D. C., of Herbert A. Gill disbursing agent, U. S. Fish Commission, this 19th day of November, 1887, ninety-nine dollars seventy cents, in full of the above account.

\$99.70.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 948. U. S. Commission of Fish and Fisheries, Aropagation Food Fishes, 1888. Date of account, November 1st, 1887; name, Robert Leitch & Sons; amount, \$99.70; when paid, November 19, 1887.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered.]—I. S. K. Reeves.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—I. S. K. Reeves.

Approved.—G. B. Goode, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.

*The United States to Robert Leitch and Sons, 1214 D St. N. W., Dr.**Car No. 3.*

1887.

Nov. 23. To 4-1¼ sockets	\$0. 32
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Carp ponds, Monument Lot.

Dec. 13. To 1-1½" Jenkins' valve	2. 25
1-1½" Ell	13

Feeding troughs, Wytheville, Va.

22. To 78 ft. 1½" galvanized pipe at .15	11. 70
	14. 40

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 16th day of January, 1888, fourteen dollars forty cents, in full of of the above account.

\$14.40.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 1573. U. S. Commission of Fish and Fisheries, Propagation Food Fishes, 1888. Date of account, Dec. 22, 1888; name, Robert Leitch & Sons; amount, \$14.40; when paid, Jan. 16, 1888.

Correct.—J. J. O'Connor, in ch'g office Div. of Fish-Culture.

I hereby certify that the articles mentioned were delivered; services mentioned were rendered.—I. S. K. Reeves.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—I. S. K. Reeves.

Approved.—G. B. Goode, U. S. Commission of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.

The United States, to Robert Leitch & Sons, 1214, etc. D St. N. W., Dr.

1887.

Nov. 28. To 21'' Ells 13 1--10'' union 18.....	\$0.14
Two $\frac{3}{4}$ '' unions 28 1--1 $\frac{1}{4}$ galv. tee 12	.40
Two 1 $\frac{1}{4}$ '' galv. red tee.....	.34
Two $\frac{3}{4}$ unions.....	.28
Six $\frac{3}{4}$ ells.....	.27
Thirty-one $\frac{1}{4}$ 4x1 tees.....	.45
	2.05

Fitting up aquaria Central Station.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 23 day of December, 1887, two dollars and five cents, in full of the above account.

\$2.05.

ROBERT LEITCH & SONS.

No. 1343.

[Indorsement on back.]

U. S. Commission of Fish and Fisheries, Propagation Food Fishes, 1888. Date of account, Nov. 28, 1887; name, Robert Leitch & Sons; amount, \$2.05; when paid, Dec. 23, 1887.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—J. E. Brown.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance. M. McDonald.

Approved:—J. H. Kidder, Acting U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.

The United States to Robert Leitch & Sons, 1214 D st. N. W., Dr.

1887.

Dec. 12. To 11 lbs. brass castings	\$2.75
To 6 lbs. brass tubing	1.80
	4.55

General repairs, Central Station.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 23' day of January, 1888, four dollars fifty-five cents, in full of the above account.

\$4.55.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 1604. U. S. Commission of Fish and Fisheries, Propagation Food Fishes, 1888. Date of account, Dec. 12, 1887; name, Robert Leitch & Sons; amount, \$4.55; when paid, Jan. 23, 1888.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—J. E. Brown.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—J. J. O'Connor.

Approved.—G. B. Goode, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.

The United States to Robert Leitch & Sons, 1214 D st., N. W., Dr.

1887.		
Dec. 16.	To one 7'' cross, \$5.60; 3 7x6 bushings, \$4.50.....	\$10.10
	one 7'' socket, \$1.30; 1 6'' ell, \$1.56	2.86
	two 6'' flanges	2.56
17.	To one pc. 6'' pipe, 3 ft. long.....	2.48
	one pc. 6'' pipe, 1 ft. 4'' long	1.10
	five 6'' threads	2.50
20.	To 3 ft. 9'' 1½ pipe, .41; cutting .20	.61
	one pc. 6'' pipe, 9½ long.....	.66
	two 6'' threads, \$1.00; one 6'' cap, .94	1.94
	two 6'' nipples, \$2.20; two 6'' ells, \$3.12	5.32
	one pc. 6'' pipe 1 ft. 4'' long	1.10
	two pair 6'' flange unions	5.20
	nine 6'' threads	4.50
23.	To two pieces 6'' pipe, 2 ft. 6'' long each.....	4.13
	one piece 6'' pipe 1 ft. 3'' long	1.03
	two 6'' nipples, \$2.20; twelve 6'' threads, \$6.00	8.20
	one 6'' plug, .96; one 6'' socket, .96.....	1.92
		56.21

Carp ponds, Monument Lot.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 21st day of January, 1888, fifty-six dollars twenty-one cents, in full of the above account.

\$56.21.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 1598. U. S Commission of Fish and Fisheries, Propagation Food Fishes, 1888. Date of account, Dec. 23, 1887; name, Robert Leitch & Sons; amount, \$56.21; when paid, Jan. 21, 1888.

Correct.—J. J. O'Connor, in chg. office, Div. Fish Cult.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—I. S. K. Reeves.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—I. S. K. Reeves.

Approved.—G. B. Goode, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.

The United States to Robert Leitch & Sons, 1214 D st., N. W., Dr.

1888.		
Jan. 1.	To one 6'' hub end valve	\$15.00
	To one length 6'' iron pipe	1.50
		16.50

Carp ponds, U. S. Arsenal grounds, Washington, D. C.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 19th day of January, 1888, sixteen dollars fifty cents, in full of the above account.

\$16.50.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 1584. U. S. Commission of Fish and Fisheries, propagation food fishes, 1888. Date of account, Jan. 1, 1888; name, Robert Leitch & Sons; amount, \$16.50; when paid, Jan. 19, 1888.

Correct.—J. J. O'Connor, in charge Div. of Fish Culture.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—Rud'l Hessel.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Rud'l Hessel.

Approved.—G. B. Goode, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.

The United States to Robert Leitch and Sons, 1214 D st., N. W., Dr.

Central Station.

1888.

Jan. 3.	To one $\frac{3}{4}$ " check valves, .65; one $1\frac{1}{2}$ " unions, .30	\$0.95
	one $1\frac{1}{2}$ " nipple, .09; (7) two 1" tees, .20	.29
7.	To 90 ft. 1" pipe, \$5.40; six 1" reducing tees, .72	6.12
	51 ft. $\frac{1}{2}$ " pipe, \$1.53; four 1" ells, .28	1.81
	17 ft. $\frac{3}{4}$ " pipe, .85; six $\frac{1}{2}$ " reducing ells, .24	1.09
	one 1" union, .18; one $1\frac{1}{2}$ " reducing ells, .15	.33
	one 1" Jenk valve, \$1.60; (10) one $\frac{1}{2}$ " union, .10	1.70
10.	To one 1" nipple, .05; (19) one $\frac{1}{2}$ " cross, .06	.11
	one $\frac{1}{2}$ " reducer, .04; four $1\frac{1}{4}$ " clamps, .12	.16
	two $\frac{1}{4}$ " ells, .04; one $\frac{3}{8}$ " union, .09	.13
	one $\frac{3}{8}$ " ells, .03; one $\frac{1}{2}$ " union, .10	.13
	one 1" nipple, .05; one $\frac{1}{4}$ " union, .08	.13
	one $\frac{1}{2}$ " reducer, .04; one 1" reducing ell, .08	.12
	six $\frac{1}{2}$ " ells, .18; two $\frac{3}{4}$ " tees, .13	.31
	four $\frac{3}{4}$ " ells, .20	.20

Repairs Car No. 2.

Jan. 3.	To one 1" globe valve, .90; two $1\frac{1}{2}$ " plugs, .13	1.03
7.	four 1" unions, .92; 12 ft. 1" pipe, .72	1.64

Pumping engine, carp ponds.

19.	To two $\frac{1}{2}$ " tees, .09; two $\frac{3}{4}$ " R. and L. sockets, .15	.24
26.	four $\frac{1}{2}$ lbs. brass castings	1.35

17.84

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 27th day of February, 1888, seventeen dollars eighty-four cents, in full of the above account.

\$17.84.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 1864. U. S. Commission of Fish and Fisheries, Propagation Food Fishes, 1888; Date of account, Jan. 26, 1888; name, Robert Leitch & Sons; amount, \$17.84; when paid, Feb. 27, 1888.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—I. S. K. Reeves.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance. I. S. K. Reeves.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.

The United States to Robert Leitch & Sons, 1214, &c., D St. N. W., Dr.

1888.

Feb. 2.	To 2 $1\frac{1}{4}$ " L, .20; 2 1" plugs, .06; 3 $\frac{3}{4}$ " plugs, .08	\$0.34
	2 $\frac{3}{4}$ " red L, 11; (9) 34 ft. $\frac{3}{4}$ " pipe, \$1.36	1.47
9.	2 $\frac{3}{4}$ " unions, .28; 4 $\frac{3}{4}$ " L's .18	.46
	2 1" tees, .20; (10) 4-lb brass castings, \$1.20	1.40

3.67

Armory Building equipment.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 22d day of March, 1888, three dollars and sixty-seven cents, in full of the above account.

\$3.67.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 2034. U. S. Commission of Fish and Fisheries, propagation food fishes, 1888. Date of account, Feb. 10, 1888; name, Robert Leitch & Sons; amount, \$3.67; when paid, March 22, 1888.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—I. S. K. Reeves.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—I. S. K. Reeves.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.

The United States to Robert Leitch & Sons, 1214, &c., D St., Dr.

1888.			
Feb. 2.	To 2 ½" plugs, .04; (4) 1 colored gange glass, .50.....	\$0.54	
15.	1 ¾ lbs. brass tubing, .70; (16) 1 ¾" hose coupling, .20.....	.90	
18.	2 1" angle valve, \$1.80; 2 ¾" unions, .28; 4 1 nip L, .32.....	2.40	
	2 1½" unions, .60; 4 1½" nip L, .56.....	1.16	
20.	Castings, .40; 1 1" tee, .10; 11 lbs. fitting, 1.54.....	2.04	
	2 1½" unions, .60; 2 1" angle valve, 1.80.....	2.40	
22.	5½ lbs. castings, \$1.65; 2 ½" nip L, .07; 2 1½" unions, .60.....	2.30	
25.	1 2" check-valve, \$2.66; 3 2" nipples, .39.....	2.99	
	1 2" long screw, .85; 2 1" unions, .34; 2 1" nips L, .16.....	1.35	
	2 1½" nipples, .17; 9 lbs. fittings, \$1.26; 2 1" nipples, .10.....	1.53	
	34 ft. ½" pipe, \$1.36; 39 lbs. sheet lead, 3.12; 17 fr. ¾" pipe, .85.....	5.33	
	6 1" nip L, .48; 1 ¾" union, .14; 4 1" L, .26; 1 ½" union, .10.....	.98	
27.	1 ¾" S. O. L., .09; 4 ¾" brass flanges, .60.....	.69	
	4 1" red T, .48; 2 1" unions, .34; 1 ½" red T, .22.....	1.04	
	3 lbs. brass castings, .90; 3 ½" L, .09.....	.99	
	Car No. 2	26.66	

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 22d day of March, 1888, twenty-six dollars sixty-six cents, in full of the above account.

\$26.66.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 2035. U. S. Commission of Fish and Fisheries, propagation food fishes 1888. Date of account, February 27, 1888; name, Robert Leitch & Sons; amount, \$26.66; when paid, March 22, 1888.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—I. S. K. Reeves.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Geo. H. H. Moore, supt. dist., I. S. K. Reeves.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPOGATION OF FOOD FISHES, 1888.

The United States to Robt. Leitch and Sons, Dr.

Aquaria—Central Station.

1888.			
Mar. 2.	45 ft. 2" pipe, \$6.30; 60 ft. 1" pipe, 3.60.....	\$9.90	
	25 ft. ¾" pipe, .75; 5 2" T's, \$1.50.....	2.25	
	3 2" L's, .60; one red T 1½" x ½", .22.....	.82	
	4 1½" x 1 red T, .48; one red L 1" x ½", .08.....	.56	
	2 1" L's, .13; 5 ¾ L, .15; 2 1" unions, .36.....	.64	

Gas-fixtures, Central Station.

1888.		
Mar. 9.	60 ft. $\frac{3}{8}$ " pipe, 1.80; 12 $\frac{3}{8}$ " T's, .60.....	\$2. 40
	6 $\frac{3}{8}$ " L's, .30; 12 branch-cocks and tips, \$3.00	3. 30
	30 ft. $\frac{1}{4}$ " black pipe	. 75
21.	50 ft. $\frac{3}{8}$ " pipe.....	1. 50
	34 ft. $\frac{3}{4}$ " pipe	1. 70
Apr. 10.	2 $\frac{3}{4}$ " L's .09; 5 $\frac{1}{4}$ " T's, 15.....	. 24
	10 $\frac{1}{4}$ " L's	. 20

General Equipment, Central Sta.

1 alligator wrench, 2.25; $\frac{1}{2}$ doz. files, 2.00.....	4. 25
	28. 51

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 19th day of April, 1888, twenty-eight dollars fifty-one cents, in full of the above account.

\$28.51.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 2288. U. S. Commission of Fish and Fisheries, propagation food fishes, 1888. Date of account, April 10, 1888; name, Robt. Leitch & Sons; amount, \$28.51; when paid, April 19, 1888.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—Wm. P. Seal, supt. central sta.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.

The United States to Robert Leitch & Sons, 1214 & 1216 D St. N. W., Dr.

Reprs. Hatching Apparatus Car No. 3.

1888.		
Mar. 8.	One 1" gate valve, \$1.50; 6 1" L's, .39.....	\$1. 89
10.	Two 1 $\frac{1}{2}$ " red T., .44; 4 1 $\frac{1}{2}$ " L., .50; 2 1 $\frac{1}{2}$ " T., .38; 1 1 $\frac{1}{2}$ " unions, .30....	1. 62
	Forty-eight ft. 1" pipe, \$2.88; 1 $\frac{3}{8}$ " S. O. L., .05; 1 2" T., .30; 2 2" bushing, .27.....	3. 50
	Two 1" gal. L. screws, \$1.00; 1 1 $\frac{1}{2}$ " cross, .25; 1 $\frac{1}{2}$ " bushing, .09	1. 34
	One 1 $\frac{1}{2}$ " nipple, .09; 1 1" nipple, .05; 1 2" bushing, .14.....	. 28
	Three 2 in. red T.....	1. 05
	Four 2" L., .80; 1 2" union, .40; 1 1" union, .17.....	1. 37

Equipment Car No. 2.

14.	One 14" Stillson wrench.....	2. 00
	Seven bushings	3. 75

Hatching Equipment Car No. 2.

	Four $\frac{3}{4}$ " T's, .26; 2 1" S. O. L., .26.....	52
8.	Sixteen ft. $\frac{1}{4}$ " pipe, .48; brass handle, .25.....	73
	Four 2" sockets, .56; 4 2" plugs, .40	96
	One $\frac{3}{4}$ " red T., .84; 2 $\frac{3}{4}$ " bushings, 8 c	16
	Two 1" angle valves, \$1.80; 1 1" union, 17 c	1. 97
	One 1" globe valve, \$1.00; 2 2" bushings, 27 c	1. 27
	Three 1" nipples, .15; 2 1 $\frac{1}{2}$ " nipples, 29 c; 1 1" bushing, .17.....	61
		23. 02

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 17th day of April, 1888, twenty-three dollars two cents, in full of the above account.

\$23.02.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 2243. U. S. Commission of Fish and Fisheries, propagation food fishes, 1888. Date of account, March 14, 1888; name, Robert Leitch & Sons; amount, \$23.02; when paid, April 17, 1888.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—I. S. K. Reeves.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Geo. H. H. Moore, supt. of distribution.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.

The United States to Robert Leitch & Sons, Dr.

1214 & 1216 D St. N. W.

1888.

Mch. 21.	Forty ft. 10" pipe, \$4.49; 4 1½" caps, .60; 1 2" T, .25.....	\$5.34
	Sixteen ft. 2" pipe, \$2.24; 1 2" red T, .28; 1 1½", .18.....	2.70
	Two 2" red L, .40; 1 2" gate-valve, \$4.38.....	4.78
	Two 1½ L, .30; 57 ft. 3" pipe, \$16.68; 3 lbs nails, .50.....	17.48
	Cutting, .90; 60 ft. 1" pipe, \$3.60; flue brush, \$2.50; 5 3" L, \$2.65....	9.65
	Four 2" sockets, .56; 4 2" Ls, .80; 1.3 nipple, .38; 4 1" L, .26; 6 ½" L, .18	2.18
	One 1" check-valve.....	1.00
		43.13

Repairing hatching house, Ft. Washington, Md.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent U. S. Fish Commission, this 19th day of April, 1888, forty-three dollars thirteen cents, in full of the above account.

\$43.13.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 2287. U. S. Commission of Fish and Fisheries, propagation food fishes, 1888. Date of account, Mch. 21st, 1888; name, Robert Leitch & Sons; amount, \$43.13; when paid, April 19th, 1888.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—I. S. K. Reeves.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—S. G. Worth.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.

The United States to Robert Leitch & Sons, Dr.

1888.

April 4.	Eight ¼" plugs, .12; two ¾ reducers, .18.....	\$0.30
	Four ¾" ells, .30; three ¾" unions, .44.....	.74
	One 1" bushing tie, .9; one ¼" reducer, .20.....	.29
	Two 1" bushings, .10; one ¾" reducer, .10.....	.20
	Two ¾" nipple ells, .30; three ¾" nipples, .15.....	.45
	One ¼" union, 8; one ¾" union, 10.....	.18
	One ½" union, .09; five 1" ells, .55.....	.64
	Two valve-wheels, .45; two ½" nipple ells, .18.....	.63
	Two 1 S. O. ells.....	.44
11.	One 2" check-valve, \$2.60; two 1½ nipple ells, .26.....	2.86

1888.

Apr. 11.	Two 1½ unions, .60; one 2½ bushings, .18.....	\$0.78
	Six ¾ ells, .42; one ½ valve, .50	.92
	Fifteen feet ¼" pipe, .35; one ¼ valve, .30	.65
	Four ¼ ells	.12
30.	Reducing bushing, .56; three valve-wheels, .30.....	.86
	Two ¾" globe valves, \$1.50; four ½" nipple ells, 16.....	1.66
	One ¾" gate, \$1.00; two 1" S. O. ells, .44.....	1.44
	One ½" globe, .50; six ¾" tees, .39.....	.89
	Four ½" tees, .09; five ¾" nipple ells, .28.....	.37
	Two ¾" reducing tees, .15; five 1" ells, .35	.50
	Four ½" unions, .40; two ¾" plugs, .05	.45
	One ¾" union, .14; three ¾ nipples	.28
	One ½" union, .08; five 1 nipple, .25	.33
	One ¾ reducing ell, .06; four ½" ells, .12	.18
	One 1" reducing ell, .08; one 2" gate-valve, \$4.38.....	4.46
	Two 2" nipples, .25; one 2" reducing tee, .25.....	.50
	Two brass caps, \$1.75; handle for cock, .25.....	2.00
	Two valves, .80; 12 feet ½" pipe, .21.....	1.01
	Two ½" ells, .04; one ⅝ gage-glass, .75	.79
	One ¼ reducer, .02; one brass reducer, \$1.50.....	1.52
	One set bushing and wrenches.....	6.00
	One 1½ foot valve	1.25
		33.69

Equipment car No. 3.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 19th day of June, 1888, thirty-three dollars sixty-nine cents, in full of the above account.

\$33.69.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 3091. U. S. Commission of Fish and Fisheries, propagation food fishes, 1888. Date of account, April 30, 1888; name, Robert Leitch & Sons; amount, \$33.69; when paid, June 19, 1888.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—I. S. K. Reeves.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—I. S. K. Reeves.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.

The United States to Robert Leitch & Sons, Dr.

1214 D St., N. W.

1888.

April 28.	One 2-in. globe valve.....	\$3.00
	One 1-in. globe valve.....	1.00
	Two 1½" plug cocks.....	5.00
	Two set 1" hose couplings.....	1.20
	One 1" globe valve.....	1.00
	One 1" "T"	.15
	One hose coupling	.25
		11.60

Equipment car No. 2.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 29th day of May, 1888, eleven dollars sixty cents, in full of the above account.

\$11.60.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 2710. U. S. Commission of Fish and Fisheries, propagation food fishes, 1888. Date of account, April 28, 1888; name, Robert Leitch & Sons; amount, \$11.60; when paid, May 29, 1888.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—W. A. Dunnington.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Geo. H. H. Moore, Supt. of distribution.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.

The United States to Robert Leitch & Sons, 1214 D st., N. W., Dr.

1888.
Apr. 27. To 1 set bushing, 4" to $\frac{3}{4}$ ", and wrenches..... \$6.00
2 1" globe valves 2.00
8.00

Equipment car No. 1.

Received, at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 29th day of May, 1888, eight dollars, in full of the above account.
\$8.00.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 2709. U. S. Commission of Fish and Fisheries, propagation food fishes, 1888. Date of account, April 27, 1888; name, Robert Leitch & Sons; amount, \$8.00; when paid, May 29, 1888.

Correct.—A. C. Addison.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—Newton Simmons.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Geo. H. H. Moore, Sup't of Distribution.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.

The United States to Robert Leitch & Sons, 1214 D st., N. W., Dr.

1888.
May 1. To 1 24" Stillson wrench..... \$4.20
1 oil-cup..... .50
1 $\frac{1}{4}$ " valve..... .50
\$5.20

Equipment, Ft. Washington, Md.

Received, at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 12th day of June, 1888, five dollars twenty cents, in full of the above account.

\$5.20.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 2991. U. S. Commission of Fish and Fisheries, propagation food fishes, 1888. Date of account, May 1, 1888; name, Robert Leitch & Sons; amount, \$5.20; when paid, June 12, 1888.

Correct.—A. C. Addison, examiner.

I certify that the within account is correct; that the articles or services charged therein were required and duly delivered or performed for the object above mentioned, and that the charges for the same are reasonable and the public exigency necessitated their immediate delivery or performance.—S. G. Worth.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.

The United States to Robert Leitch and Sons, 1214 D st., N. W., Dr.

1888.		
May 5.	To 1½" globe valve, \$2.25; 1 1½" union, .30	\$2.55
	3 1" ells, .21; 1 x 1x ¼"; tee .12	.33
	16 ft. 1" pipe \$1.02; 1 1" union, .18	1.20
	1 2" gate valve, \$4.38; 1 2½" hose fittings, \$2.50	6.88
	1 2" tee, .28; 2 2" nipples, .32	.60
	1 1" globe valve, \$1; 6 1" ells, .42	1.42
	1 1" 45° ell, .12; 4 1" nipple, .20	.32
	2 1" unions, .40; 2 lengths 1" pipe, \$2.04	2.44
	1 2" bushing, .14; 2 1" plugs, .06	.20
	2 pr. plyers, .80; 1 14" Stillson wrench, \$2.25	3.05
	22 blank keys	3.00
		21.99

Equipment Central Station.

Received, at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 19th day of June, 1888, twenty-one dollars ninety-nine cents, in full of the above account.

\$21.99.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 3092, U. S. Commission of Fish and Fisheries. Propagation food fishes, 1888. Date of account, May 5, 1888; name, Robert Leitch & Sons; amount, \$21.99; when paid, June 19, 1888.

I certify that the within account is correct; that the articles or services charged therein were required and duly delivered or performed for the object above mentioned; and that the charges for the same are reasonable, and the public exigency necessitated their immediate delivery or performance.—Wm. P. Seal, sup't Central Station.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.

The United States to Robert Leitch & Sons, Dr.

1888.		
May 30.	To 2 lbs. Tuck's packing	\$1.00
	2 ¾" tees, .14; 2 lbs. brass tubing, .80	.94
	1 ¾" check valve, .75; 1 ¾" union, .14	.89
	2 1" bushing	.09
	1 1" tee	.10
		3.02

Putting in new pump to feed boiler, car No. 2.

Received, at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 19th day of June, 1888, three dollars two cents, in full of the above account.

\$3.02.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 3094. U. S. Commission of Fish and Fisheries. Propagation food fishes, 1888. Date of account, May 30, 1888; name, Robert Leitch & Sons; amount, \$3.02; when paid, June 19th, 1888.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—I. S. K. Reeves.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—I. S. K. Reeves.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.

The United States to Robert Leitch and Sons, No. 1214 D st., N. W., Dr.

1888.

May 30. To repairing suction hose for Herreshoff pumping engine..... \$3.50

Carp-ponds.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 19th day of June, 1888, three dollars fifty cents, in full of the above account.

\$3.50.

(S'd)

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. —. U. S. Commission of Fish and Fisheries, propagation food fishes, 1888. Date of account, May 30, 1888; name, Robert Leitch and Sons; amount, \$3.50; when paid, June 19, 1888.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—I. S. K. Reeves.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—I. S. K. Reeves.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.

The United States to Robert Leitch & Sons, 1214 D st., N. W., Dr.

1888.

June 4. To 10 lbs. waste \$1.00

To 2 lbs. copper wire..... 1.20

2.20

Equipment of Central Station.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 12th day of June, 1888, two dollars twenty cents, in full of the above account.

\$2.20.

(Signed)

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 2990. U. S. Commission of Fish and Fisheries, propagation food fishes, 1888. Date of account, June 4, 1888; name, Robert Leitch & Sons; amount, \$2.20; when paid, June 2, 1888.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered] and the charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Wm. P. Seal, supt. central sta.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 20th day of November, 1888, two dollars and sixty cents, in full of the above account.

\$2.60.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 965. U. S. Commission of Fish and Fisheries. Propagation food fishes, 1889. Date of account, October 23, 1888; name, Robert Leitch & Sons; amount, \$2.60; when paid, November 20, 1888.

A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—S. G. Worth.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—S. G. Worth.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF PROPAGATION OF FOOD FISHES, 1889.

The United States to Robert Leitch & Sons, Dr.

1888.		
Oct. 27.	To 4 1 $\frac{1}{4}$ red l's., 48; 2 1" R. & L. sockets, 20.....	\$0.68
	2 1 $\frac{1}{4}$ " sockets, 25; 2 1" bushings, 9.....	.34
	2 set-cocks, \$1.25	1.25
		2.27

Received at Washington, D. C., of J. F. Ellis, this 29 day of Oct., 1888, two dollars, twenty-seven cents, in full of the above account.

\$2.27.

ROBERT LEITCH & SONS.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1889.

The United States to J. F. Ellis, Dr.

1888.		
Oct. 29.	To miscellaneous expenses at Washington, D. C., on car No. 3, on acc't of maintenance and repairs of car, on acc't maintenance and repair of apparatus and equipment, Robert Leitch & Sons.....	\$2.27

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 10 day of Nov., 1888, twenty-three dollars sixty-nine cents, in full of the above account.

\$23.69.

J. F. ELLIS.

[Indorsement on back.]

No. 910. U. S. Commission of Fish and Fisheries, propagation food fishes, 1889. Date of account, Oct. 29, 1888; name, J. F. Ellis; amount, \$23.69 when paid, Nov. 10, 1888.

H. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—J. F. Ellis.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Geo. H. H. Moore, sup't of distribution.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

INVESTIGATION OF THE FISH COMMISSION.

ON ACCOUNT OF PROPAGATION OF FOOD FISHES, 1889.

The United States to Robert Leitch & Sons, Dr.

1888.		
Dec. 10.	One 1½ Red T, 18c. ; two 1" nipples, 15.....	\$0.33
	Three 1" unions, 60 ; two 1½ bushings, 20	.80
	One 1½ nipples	.12
		1.25

Received at Washington, D. C., of J. F. Ellis, this 10th day of December, 1888, one dollar twenty-five cents, in full of the above account.
\$1.25.

ROBERT LEITCH & SONS.

ON ACCOUNT OF PROPAGATION OF FOOD FISHES, 1889.

The United States to Robert Leitch & Sons, Dr.

1888.		
Dec. 12.	2½ lbs. fittings.....	\$0.35
	Two 1" American unions.....	.60
	One 1½ bushings.....	.08
		1.03

Received at Washington, D. C., of J. F. Ellis, this 12th day of December, 1888, one dollar three cents, in full of the above account.
\$1.03.

ROBERT LEITCH & SONS.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1889.

The United States to J. F. Ellis, Dr.

1888.		
Dec. 1.	To miscellaneous expenses at Washington, D. C., car No. 3, on account maintenance and repairs of apparatus and equipment.....	
Dec. 10.	Robert Leitch & Sons	\$1.25
12.	" " " "	1.03
	On acc't distribution of carp	

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 21st day of Dec., 1888, sixteen dollars thirty-four cents, in full of the above account.
\$16.34.

J. F. ELLIS.

[Indorsement on back.]

No. 1328. U. S. Commission of Fish and Fisheries, Propagation Food Fishes, 1889. Date of account, Dec. 15, 1888; name, J. F. Ellis; amount, \$16.34; when paid, Dec. 21, 1888.

A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—J. F. Ellis.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Geo. H. H. Moore, Supt. Dist.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1889.

The United States to Robert Leitch & Sons, 1214, &c., D St., N. W., Dr.

1889.

Jan. 28. To repairing copying-press..... \$10.50

Brass yoke.

Office of Commissioner.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 16th day of April, 1889, ten dollars fifty cents, in full of the above account.

\$10.50.

(Signed)

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 2454. U. S. Commission of Fish and Fisheries, propagation food fishes, 1889. Date of account, Jan'y 28, 1889; name, Robert Leitch & Sons; amount, \$10.50; when paid, Apl. 16, 1889.

A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—J. J. O'Connor.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—J. J. O'Connor, chief clerk.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1889.

The United States to Robert Leitch & Sons, 1214 D street, N. W., Dr.

1889.

Feb'y. 22. To 5 $\frac{3}{4}$ " brass tees \$1.00

2 lbs. " tubing80

Mar. 25. 133 lbs. sheet lead.....at 7 c.. 9.31

11.11

Central Station Aquaria Annex..... \$1.80

Launch Blue Wing, flooring engine-room..... 9.31

Fort Washington, Md., Station.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 11 day of April, 1889, eleven dollars eleven cents, in full of the above account.

\$11.11.

(Signed)

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 2415. U. S. Commission of Fish and Fisheries; propagation food fishes, 1889.

Date of account, March 25, 1889; name, Robert Leitch & Sons; amount, \$11.11; when paid, April 11, 1889.

A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—S. G. Worth.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—S. G. Worth.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1889.

The United States to Robert Leitch & Sons, 1214 D street, Dr.

1889.

Mar. 28. To 3 lbs. brass rod \$1.50

Launch Blue Wing, Fort Washington, Md.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 8 day of Apl., 1889, one dollar fifty cents, in full of the above account.

\$1.50.

(Signed.)

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 2368. U. S. Commission of Fish and Fisheries, propagation food fishes, 1889. Date of account, March 28, 1889; name, Robert Leitch & Sons; amount, \$1.50; when paid, Apl. 8, 1889.

A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—S. G. Worth.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—S. G. Worth.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF PROPAGATION OF FOOD FISHES, 1889.

The United States to Robert Leitch & Sons, Dr.

1889.

April 26. To 12 lbs. casting \$1.35

Received at Washington, D. C., of J. Frank Ellis, this 26th day of April, 1889, one dollar and thirty-five cents in full of the above account.

\$1.35.

(Signed)

ROBERT LEITCH & SONS.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1889.

The United States to J. F. Ellis, Dr.

1889.

Apl. 26. To traveling expenses on car No. 3 on trip from Washington, D. C., to Augusta, Ga., and return, Shad distribution.

On acct. maintenance and repair of car. On acct. of maintenance and repair of apparatus and equipment, Robert Leitch & Sons \$1.35

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 6th day of July, 1889, twenty-eight dollars twenty cents, in full of the above account.

\$28.20.

(Signed)

J. F. ELLIS.

[Indorsement on back.]

No. 3232. U. S. Commission of Fish and Fisheries, propagation food fishes, 1889. Date of account, May 2, 1889; name, J. F. Ellis; amount, \$28.20; when paid, July 6, 1889.

A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—J. F. Ellis.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Geo. H. H. Moore.

Approved.—Richard Robbins, Acting U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1889.

The United States to Robert Leitch & Sons, Dr.

1889.		
May 17.	To 1—2½ T	.33
	1 hock saw blade	.25
		.58

Shad production, Central Station equipment for repairing waste pipe.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent U. S. Fish Commission, this 29 day of June, 1889, fifty-eight cents, in full of the above account.
\$0.58.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 3172. U. S. Commission of Fish and Fisheries, propagation food fishes, 1889. Date of account, May 17, 1889; Name, Robert Leitch & Sons; amount, \$0.58; when paid, June 29, 1889.

A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—S. G. Worth.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—S. G. Worth.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1890.

The United States to Robert Leitch & Sons, 1216 D St. N. W., Dr.

1889.		
July 29.	To 50 lbs. brass tubing 40	\$20.00
	Aerating tubes, Aquaria annex, Central Station.	

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 9th day of Aug., 1889, twenty dollars, in full of the above account.
\$20.00.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 217. U. S. Commission of Fish and Fisheries, propagation food fishes, 1890. Date of account, July 29, 1889; name, Robert Leitch & Sons; amount, \$20; when paid, Aug. 9th, 1889.

H. A. Gill, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—S. G. Worth.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—S. G. Worth.

Approved.—Richard Rathbun, Acting U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1890.

The United States to Robert Leitch & Sons, 1214 D st., N. W., Dr.

1889.		
Aug. 3.	To 6½ mal. ells	.60
24.	6 lbs. brass casts	1.50
		2.10

Aquaria, central station.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 16th day of Sept., 1889, two dollars and ten cents, in full of the above account.

\$2.10.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 485. U. S. Commission of Fish and Fisheries. Propagation food fishes, 1890. Date of account, Aug. 24, 1889; name, Robert Leitch & Sons; amount, \$2.10; when paid, Sept. 16, 1889.

A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—S. G. Worth.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—S. G. Worth.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPOGATION OF FOOD FISHES, 1890.

The United States to Robert Leitch & Sons, 1214 D St., N. W., Dr.

1889.				
Sept. 5.	To	2, $\frac{3}{8}$ "	Locknuts.....	.05
		2, $\frac{3}{8}$ "	Bushings.....	.05
		6	Paper washers.....	.08
				.18
Miscellaneous, Central Station:				
			Water-closet.....	.08
			Water-tank.....	.10

Received at Washington, D. C., of Herbert A. Gill, disbursing agent U. S. Fish Commission, this 10th day of October, 1889, eighteen cents, in full of the above account.

\$0.18.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 741. U. S. Commission of Fish and Fisheries; propagation food fishes, 1890; date of account, Sept. 5, 1889; name, Robert Leitch & Sons; amount, \$0.18; when paid, Oct. 10, 1889.

A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—S. G. Worth.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—S. G. Worth.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD-FISHES, 1890.

The United States. to Robert Leitch & Sons, 1214 D st. N. W., Dr.

S
ept. 7, 1889, to repairing valve \$0.90

Carp ponds, Monument Lot.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 30th day of September, 1889, ninety cents, in full of the above account.

\$0.90.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 628. U. S. Commission of Fish and Fisheries, propagation food-fishes, 1890. Date of account, Sept. 7, 1889; name, Robert Leitch & Sons; amount, \$0.90; when paid, Sept. 30, 1889.—A. C. Addison.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—Rud. Hessel, Supt. Carp Ponds.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Rud. Hessel.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1890.

The United States to Robert Leitch & Sons, 1214 D st. N. W., Dr.

Drip pans to heaters—Offices.

1889.		
Oct. 15.	To 104 ft. $\frac{1}{8}$ " pipe	21.. \$2. 60
	12 $\frac{1}{8}$ " ell's	3.. .36
	12 $\frac{1}{8}$ " sockets	3.. .36

Filter—Offices.

23.	To 1 lb. brass rod	.40
	2½ lbs " castings	25.. .63

Aquaria, Central Station.

24.	To 6 $\frac{3}{4}$ unions	14.. .84
	1 $\frac{5}{8}$ " x 18" gauge glass	.50
		5.69

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 12th day of Dec., 1889, five dollars sixty-nine cents, in full of the above account.

\$5.69.

ROBERT LEITCH & SONS.

Indorsement on back.

No. 1486. U. S. Commission of Fish and Fisheries, propagation food-fishes, 1890. Date of account, Oct. 24, 1889; name, Robert Leitch & Sons; amount, \$5.69; when paid, Dec. 12, 1889.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—S. G. Worth.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—S. G. Worth.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD-FISHES, 1890.

The United States to Robert Leitch & Sons, 1214 D st., N. W., Dr.

Oct. 29, 1889,	to 50 ft. 1½" pipe	\$4.78
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Salmon hatchery, Fort Gaston, Cal.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 12th day of November, 1889, four dollars seventy-eight cents, in full of the above account.

\$4.78.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 1116. U. S. Commission of Fish and Fisheries, propagation food fishes, 1890. Date of account, October 29, 1889; name, Robert Leitch & Sons; amount, \$4.78; when paid, November 12, 1888.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—S. G. Worth.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—S. G. Worth.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD-FISHES, 1890.

The United States to Robert Leitch & Sons, 1214 D. St. N. W., Dr.

Nov. 29, 1889, to 1½ lbs. brass casting 30.. \$0.45

Valve stem to drain-pipe, carp ponds, Monumental Lot.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 13th day of Dec., 1889, forty-five cents, in full of the above account.

\$0.45.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 1507. U. S. Commission of Fish and Fisheries, propagation food fishes, 1890. Date of account, November 29, 1889; name, Robert Leitch and Sons; amount, \$0.45; when paid, Dec. 13, 1889.

Correct.—A. C. Addison.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—P. T. Yeatman, Acting Supt. Central Sta., U. S. F. C.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—P. T. Yeatman, Acting Supt. Central Sta., U. S. F. C.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1890.

The United States to Robert Leitch & Sons, 1214 D St., N. W., Dr.

1889.

Tubes for gas engine. Aquaria, Central Station.

Dec. 4. To 2½ lbs. brass tubing, .40..... \$1.00

Gas burners, general offices:

Dec. 14. To 3 ¼" burner cocks, .50 1 50

Dec. 14. To 12 ¼" pipe, .02½30

2.80

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 7th day of Jan'y, 1890, two dollars eighty cents, in full of the above account.

\$2.80.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 1805. U. S. Commission of Fish and Fisheries, propagation food fishes, 1890. Date of account, Dec. 14, 1889; name, Robert Leitch & Sons; amount, \$2.80; when paid, Jany. 7, 1890.

A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—P. T. Yeatman, Acting Supt. Central Sta., U. S. F. C.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—P. T. Yeatman, Acting Supt. Central Sta., U. S. F. C.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF PROPAGATION OF FOOD FISHES, 1890.

The United States to Robert Leitch & Sons, Dr.

1889.		
Dec. 13.	1 $\frac{3}{4}$ check-valve.....	\$1.00
	2 $\frac{3}{4}$ x $\frac{1}{4}$ reducers	.20
	1 1 x $\frac{3}{4}$ reducer	.15
		1.35

Received at Washington, D. C., of W. A. Dunnington this 13 day of Dec., 1889, one dollar thirty-five cents, in full of the above account.

\$1.35.

ROBERT LEITCH & SONS.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1890.

The United States to W. H. Dunnington, Dr.

1889.		
Dec. 15.	Expenses of trip from Washington, D. C., to Wytheville, Va. O acct. of maintenance and repairs of car No. 2. On acct. of mainten- ance of apparatus and equipment. Robt. Leitch & Sons	\$1.35

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 28 day of Dec., 1889, nineteen dollars two cents, in full of the above account.

\$19.02.

W. A. DUNNINGTON.

[Indorsement on back.]

No. 1633. U. S. Commission of Fish and Fisheries, propagation of food fishes, 1890. Date of account, Dec. 20, 1889; name, W. A. Dunnington; amount, \$19.02; when paid, December 28, 1889.

A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—W. A. Dunnington.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance. Geo. H. H. Moore, supt. of distribution.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1890.

The United States to Robert Leitch & Sons, 1214 D St., Dr.

1890.		
Jany. 4.	To 2 $\frac{1}{2}$ lbs. brass castings, 25	.68
	Repairs of pump, Fort Washington, Md., station.	

Received, at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 10th day of February, 1890, sixty-eight cents, in full of the above account.

\$0.68.

(Signed) ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 2112. U. S. Commission of Fish and Fisheries, propagation food fishes, 1890. Date of account, Jan 4, 1890; name, Robert Leitch & Sons; amount, \$0.68; when paid, Feby. 10, 1890.

A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—S. G. Worth.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—S. G. Worth.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1890.

The United States to Robert Leitch & Sons, 1214 D St., N. W., Dr.

1890.

Mar. 28. To 2½ lbs brass tubing	\$0.90
2 ¼" unions	.20
	1.10

Equipment Central Station, filters for drinking water.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 10th day of April, 1890, one dollar ten cents, in full of the above account.

\$1.10.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 2664. U. S. Commission of Fish and Fisheries, propagation food fishes, 1890. Date of account, March 28, 1890; name, Robert Leitch & Sons; amount, \$1.10; when paid, April 10, 1890.

A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—S. G. Worth.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1890.

The United States to Robert Leitch & Sons, 1214 D St. N. W., Dr.

1890.

Apr. 18. To 162½ ft. 1½" pipe, .09½	\$14.91
109½ ft. 2" pipe, .12	13.09
38¾ ft. 2½" pipe, .18½	7.20
104½ ft. 3" pipe, .24½	25.86
8 1½ globe valves	12.80
1 2" globe valve	2.40
1 2" plug cock, 8 2x1½ T's, .21 \$1.68,	8.68
8 1½ Tes., .12, .96, 1 2" Tee., .18, 1 2½ & 2x2 Tee., .38	1.52
1 3" Tee., .62, 2 2½" L's, .23, .46, 4 2" L's, .12, .48	1.56
1 3" S. O. Ell, .70, 6 3" Ells, .33, \$1.98, 16 1½ caps, .12 \$1.92	4.60
3 2" caps, .12, .36, 1 2" nipple, .10, 1 2½" lock-nut, .12	.58
1 3" lock-nut, .15, 1 3" Tee., .45, 1 3x2 Socket, .36	.96
	94.16

Shad hatchery, Gloucester, N. J.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 29th day of May, 1890, ninety-four dollars sixteen cents, in full of the above account.

\$94.16.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 3208. U. S. Commission of Fish and Fisheries, propagation food fishes, 1890. Date of account, April 18, 1890; name Robert Leitch & Sons; amount, \$94.16; when paid, May 29, 1890.

A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered]. The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—John Gay.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1890.

The United States to Robert Leitch & Sons, 1214 D st. N. W., Dr.

1890.

Apr. 12. To 98 pounds sheet-lead, at 7 cents per pound \$6.86

Distribution equipment.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent. U. S. Fish Commission, this 13th day of May, 1890, six dollars eighty-six cents, in full of the above account.

\$6.86.

ROBERT LEITCH & SONS.

[Indorsement on back.]

No. 2995. U. S. Commission of Fish and Fisheries, propagation food fishes, 1890. Date of account, April 12, 1890; name, Robert Leitch & Sons; amount, \$6.86; when paid, May 13, 1890.

A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—P. T. Yeatman, acting supt., Central Sta.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—P. T. Yeatman, acting supt., Central Sta.; Geo. H. H. Moore, supt. of distribution.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF PROPAGATION OF FOOD FISHES, 1890.

The United States to Robert Leitch & Sons, Dr.

April 14, 1890. Six 1½ hose clamps..... \$1.50

Received at Washington, D. C., of W. A. Dunnington, this 14 day of Apl., 1890, one dollar and fifty cents, in full of the above account.

\$1.50.

ROBERT LEITCH & SONS.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1890.

The United States to W. A. Dunnington, Dr.

April 14, 1890. Expenses of car No. 2; on acct. of maintenance and repair of car; on acct. of maintenance and repair of apparatus and equipment, Rob't Leitch & Sons..... \$1.50

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 26 day of Apl., 1890, seven dollars twenty-four cents, in full of the above account.

\$7.24.

W. A. DUNNINGTON.

[Indorsement on back.]

No. 2747. U. S. Commission of Fish and Fisheries; propagation food fishes, 1890. Date of account, Apl. 25, 1890; name, W. A. Dunnington; amount, \$7.24; when paid, Apl. 26, 1890.

A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—W. A. Dunnington.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Geo. H. H. Moore, supt. of distribution.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF PROPAGATION OF FOOD FISHES, 1888.

The United States to Thos. Somerville & Sons, Dr.

1888.

June 11. One suction hose strainer..... \$0.95

Received at Washington, D. C., of J. F. Ellis, this 11th day of June, 1888, ninety-five cents, in full of the above account.

\$0.95.

THOS. SOMERVILLE & SONS.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1888.

The United States to J. F. Ellis, Dr.

1888.

June 9. Expenses of car No. 3

On acc't maintenance and repair of apparatus and equipment

11. Thomas Somerville & Sons..... \$0.95

On acc't distribution.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 19th day of June, 1888, thirty dollars ninety-two cents, in full of the above account.

\$30.92.

J. F. ELLIS.

[Indorsement on back.]

No. 3090. U. S. Commission of Fish and Fisheries, propagation food fishes, 1888. Date of account, June 12, 1888; name, J. F. Ellis; amount, \$30.92; when paid, June 19, 1888.

Correct.—A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—J. F. Ellis.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Geo. H. H. Moore, sup't distribution.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1889.

The United States to Thomas Somerville & Sons, 316 to 322 13th St., N. W., Dr.

1888.

Oct. 15. To 30 ft. $\frac{3}{8}$ " wr't-iron pipe \$.906 $\frac{3}{8}$ " ells..... .182 $\frac{3}{8}$ " tees..... .08

1 double swing bracket..... .50

1 single swing bracket..... .40

3 $\frac{3}{4}$ lbs. $\frac{1}{8}$ " brass tube, at \$1.20 4.50

6.56

Central Station.—Gas fittings for stove:

Distribution office..... 2.06

Salt-water aquaria..... 4.50

Received at Washington, D. C., of Herbert A. Gill, disbursing agent, U. S. Fish Commission, this 12th day of November, 1888, six dollars fifty-six cents, in full of the above account.

\$6.56.

THOS. SOMERVILLE & SONS.

[Indorsement on back.]

No. 916. U. S. Commission of Fish and Fisheries, propagation food fishes, 1889. Date of account, October 23, 1888; name, Thomas Somerville & Sons; amount, \$6.56; when paid, November 12, 1888.

A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—S. G. Worth.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—S. G. Worth.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1889.

The United States to Thomas Somerville & Sons, 316-322 13th St., N. W., Dr.

Nov. 3, 1888. To making valve-stem \$3.20

Repairs to valve of tank No. 5, U. S. carp ponds, Washington, D. C.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent U. S. Fish Commission, this 20th day of Nov., 1888, three dollars twenty cents, in full of the above account.

\$3.20.

THOS. SOMERVILLE & SONS.

[Indorsement on back.]

No. 964. U. S. Commission of Fish and Fisheries, propagation food fishes, 1889. Date of account, Nov. 3, 1888; name, Thomas Somerville & Sons; amount, \$3.20; when paid, Nov. 20, 1888.

A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—Rud. Hessel, sup't. carp ponds.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Rud. Hessel.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF PROPAGATION OF FOOD FISHES, 1889.

The United States, to Thos. Somerville & Sons, Dr.

Jan. 4, 1889. To two (2) glass gauges \$1.30

Received at Washington, D. C., of J. Frank Ellis, this 4th day of January, 1889, one dollar thirty cents, in full of the above account.

\$1.30

THOS. SOMMENVILLE & SONS.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1889.

The United States, to J. F. Ellis, Dr.

1888.

Dec. 19. To miscellaneous expenses of car No. 3, at Washington, D. C.

On acct. maintenance and repairs of car.....

On acct. maintenance and repairs of apparatus and equipment.....

1889.

Jan. 4. Thos. Sommerville & Son \$1.30

Received at Washington, D. C., of Herbert A. Gill, disbursing agent U. S. Fish Commission, this 7 day of Jan. 1889, thirty-five dollars seventy-four cents, in full of the above account.

\$35.74.

J. F. ELLIS.

[Indorsement on back.]

No. 1522. U. S. Commission of Fish and Fisheries; propagation of food fishes, 1889. Date of account, Jan. 4, 1889; name, J. F. Ellis; amount, \$35.74; when paid, Jan. 7, 1889.

A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—J. F. Ellis.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Geo. H. H. Moore, supt. dist.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1889.

The United States to Thomas Somerville & Sons, 316 etc., 13th St., N. W., Dr.

1889.

May 4. To making 24 brass rings \$14.00
General equipment, Division of Scientific Inquiry.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent U. S. Fish Commission, this 22 day of May, 1889, fourteen dollars, in full of the above account.
\$14.00.

THOS. SOMERVILLE & SONS.

[Indorsement on back.]

No. 2776. U. S. Commission of Fish and Fisheries; propagation food fishes, 1889. Date of account, May 4, 1889; name, Thomas Somerville & Sons; amount, \$14.00; when paid, May 22, 1889.

A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—Richard Rathbun.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Richard Rathbun, Assist. in charge Scientific Inquiry.

Approved—M. McDonald, U. S. Commissioner of Fish and Fisheries.

ON ACCOUNT OF PROPAGATION OF FOOD FISHES, 1890.

The United States to Thos. Somerville & Sons, Dr.

1890.

Feb. 20. 1 $\frac{5}{8}$ " x 28" gauge glass \$0.70

Received at Washington, D. C., of J. F. Ellis, this 20th day of February, 1890, seventy cents, in full of the above account.
\$0.70

THOS. SOMERVILLE & SONS.

ON ACCOUNT OF EXPENSES OF PROPAGATION OF FOOD FISHES, 1890.

The United States to J. F. Ellis, Dr.

1890.

Feb. 20. To miscellaneous expenses on car No. 3, at Washington, D. C.; trout distribution; on acct. maintenance and repair of car

On acct. maintenance and repair of apparatus and equipment.....

20. Thos. Somerville & Sons..... \$0.70

On acct. distribution of trout.

Received at Washington, D. C., of Herbert A. Gill, disbursing agent U. S. Fish Commission, this 6th day of March, 1890, eighteen dollars eight cents, in full of the above account.

\$18.08.

J. F. ELLIS.

[Indorsement on back.]

No. 2323. U. S. Commission of Fish and Fisheries; propagation food fishes, 1890. Date of account, Feb. 26, 1890; name, J. F. Ellis; amount, \$18.08; when paid, Mar. 6, 1890.

A. C. Addison, examiner.

I hereby certify that the [articles mentioned were delivered] [services mentioned were rendered].—J. F. Ellis.

The charges in this bill are just and reasonable, and the articles or services were required by the United States Commission of Fish and Fisheries, and the public exigency necessitated their immediate delivery or performance.—Geo. H. H. Moore, supt. of dist.

Approved.—M. McDonald, U. S. Commissioner of Fish and Fisheries.

TESTIMONY OF JOSEPH W. COLLINS.

JOSEPH W. COLLINS, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. You are connected with the Fish Commission?—A. I am.

Q. In what capacity?—A. I am assistant in charge of the Division of Fisheries.

Q. What are your duties? What does the Division of Fisheries cover—please explain that?—A. I have a statement here that fully explains the work of the Division of Fisheries and my duties in connection therewith.

THE DIVISION OF FISHERIES.

ORGANIZATION.

The Division of Fisheries was organized on May 24, 1888, by the present Commissioner of Fish and Fisheries, who, on that date, appointed an assistant to assume charge of the division and the direction of its work.

PERSONNEL, ETC.

The personnel, as first constituted, included, besides others, those who had been serving in the Division of Statistical Inquiry, as organized by Professor Goode. The following is a list of the personnel at that time:

	Salaries.
J. W. Collins, assistant in charge.....	\$2,400.00
Hugh M. Smith, clerk in charge of office.....	960.00
E. C. Bryan, stenographer.....	780.00
W. A. Wilcox, field agent.....	1,500.00
Charles B. Hudson, artist.....	900.00
M. P. Snell, clerk.....	720.00
H. R. Center, clerk.....	600.00
W. H. Abbott, clerk.....	600.00
S. J. Martin, collector of statistics.....	600.00
Luther Maddocks, field agent.....	1,800.00

On June 2 the assistant in charge was appointed to the responsible charge of preparing and conducting the Fish Commission exhibit at the Centennial Exposition of the Ohio Valley and Central States, held at Cincinnati, Ohio, in the summer of 1888, and soon after Messrs. E. C. Bryan, W. H. Abbott, and H. R. Center were detailed to assist in the work.

The personnel of the division, as constituted June 15, 1890, is as follows:

	Salaries.
J. W. Collins, assistant in charge	\$2,700.00
Hugh M. Smith, clerk in charge of office of statistics	1,380.00
E. C. Bryan, stenographic clerk	1,200.00
W. A. Wilcox, statistical agent*	1,380.00
Ansley Hall, statistical agent	900.00
Charles H. Stevenson, statistical agent	900.00
W. H. Abbott, statistical agent	900.00
S. Le R. Pritchard, clerk	780.00
L. M. Collins, clerk	600.00
S. J. Martin, local agent, Gloucester, Mass.	600.00
F. F. Dimick, local agent, Boston, Mass.	300.00

WORK AND PURPOSES.

The work of the Division of Fisheries is to pursue an inquiry respecting statistics, methods, and relations of the fisheries of the sea, coast, and inland waters. The purposes of the inquiry may be briefly stated as follows:

(1) To ascertain the commercial importance of the fishery industries of the United States.

(2) To study the commercial value of fishing grounds; to define the extent and character of inshore fisheries, and those in interior waters; to determine their resources, as shown by the catch of various species; the seasons of abundance; the effect of fishing upon the supply of fish.

(3) To study the economic condition of the fishermen; to ascertain their nativity and citizenship, etc.

(4) To study the vessels and boats employed in the fisheries, with a view to suggesting improvements that may benefit the fishermen.

(5) To determine the character of different forms of apparatus of capture; their utility, and their effect upon the fisheries.

(6) To study the methods of fishing, for the purpose of suggesting improvements or discouraging the use of those which are harmfully destructive or unprofitable.

(7) To investigate the utilization of fishery products, including methods of curing, refrigeration, canning, or otherwise preparing such material for commercial purposes.

(8) To ascertain the means and methods of transportation, by sea and land.

(9) To inquire into the condition and extent of the wholesale fish trade; the sources of supply and the principal lines of distribution.

(10) To study the question of international relations affecting the fisheries.

The following brief explanations will convey a better idea of the scope and important character of the work that has been enumerated:

1. STATISTICS OF THE FISHERIES.

The study of a reported decrease of food-fishes in New England, which was the first work that the Fish Commission was charged with, necessarily involved the collection of certain data of a statistical nature showing the importance of the fisheries and to what extent they had been affected by fishing. Similar facts were required for the presentation of the American side of the case at the Halifax convention in 1877.

* On leave of absence without pay.

It will, therefore, be seen that the collection of statistical data and the study of the commercial importance and relations of the fisheries constituted a part of the work of the Commission from its inception.

From the first, Professor Baird realized the importance to the Government of being provided with comprehensive statistics of the fishery industries; and he did what he could in the early history of the Commission to supply data of this character, which, previous to the organization of the Fish Commission, was wholly lacking or so incomplete and unreliable as to be worthless.

But his means were limited, and it was not until an arrangement was made with the Census Office in 1879, whereby the Fish Commission was charged with the responsibility of making a census of the fisheries of the United States, that it was possible to enter upon this work under such auspices as would insure the desired results. What was accomplished by the Fish Commission at that time is well known, and it is worthy of remark that it was the first time in the history of the United States that a comprehensive and satisfactory statistical report was made concerning its fisheries.

The statistical data now accumulated by the Commission furnish the only safe guide to Congress in legislating upon matters affecting the fisheries, while such a source of information is of the greatest consequence in the consideration of foreign relations where the rights of fishery are involved. In recent years this has been so fully recognized by Congress and the Executive Departments of the Federal Government that frequent demands have been made upon the Commission for statistical information.

It is confidently believed that the results of the Halifax convention would have been far different, and that the United States would not have been called upon to pay the award of \$5,500,000 in 1877, if this Government had been in possession of full and detailed knowledge, such as it now possesses, of the condition of its fisheries and fishery resources.

2. FISHING GROUNDS.

The study of the fishing grounds carried on by this division differs in most particulars from the investigations made by the Division of Scientific Inquiry, and to a large extent is supplementary to the latter.

Here the purpose is to show the actual commercial value and importance of the fishing grounds resorted to by American fishermen, both within the jurisdiction of the United States, on the high seas, or in waters adjacent to foreign coasts where citizens of this country have the right to fish.

Much knowledge has been obtained of the fishing grounds controlled by foreign countries, and in some cases where these have an intimate relation to the fishing interest of the United States, they have been mapped.

The fishing grounds near our own coasts, and in the bays, rivers, and lakes, are defined, and their character and resources are illustrated and described.

In order that changes in the fisheries affecting the fishing grounds may be clearly understood, as well as any variation that may occur from time to time in existing conditions, a special effort is made to locate on maps the position of all important forms of fixed apparatus, and to show by illustrations, whenever practicable, where other special forms of fishing gear are used. This is an important phase of the work,

since it graphically presents the whole matter and furnishes the only available means of judging accurately concerning the influence exerted upon the abundance of fish by the use of certain devices for their capture. It also shows clearly the special conditions under which the different kinds of apparatus can be most profitably employed.

Nothing is of greater consequence or more helpful to the fishermen than this; for, though one may have fished all his life under certain conditions, he may, nevertheless, not possess the knowledge which will enable him to attain success when those conditions are changed, and he finds that what he has previously learned is entirely inadequate to insure profitable results under the new circumstances in which he is placed. Through its publications the Commission gives to the fisherman that special knowledge which enables him to employ such apparatus and methods as are best suited to the fishing grounds that he frequents, and to avoid the use of such as may prove destructive to a fishery and perhaps at the same time unremunerative.

Knowing the kind and quantity of apparatus used on the fishing grounds and the quantities of fish taken from year to year, the influence of certain methods and devices upon the abundance of fish can be determined with accuracy, when, without this knowledge, conclusions would have to be based on guess-work, or would generally be open to the influence of prejudice, as too often has been the case.

An important object in connection with a study of the fishing grounds has been to determine as nearly as possible the relative quantities taken of each species on each important area; the seasons of abundance of the different species; migrations from one locality to another, as shown by the catch; and the influence of currents, food, etc., upon their abundance and capture.

Much useful information is obtained by the Division of Fisheries from the fishermen and others concerning the characteristics and importance of distant fishing grounds. The fishermen have shown a marked interest in this direction, and the Commission is in possession of many notes and journals which have been voluntarily prepared, without remuneration of any kind, and which contain much valuable information that could not otherwise be obtained. This affords to the Commission an opportunity of determining and pointing out to the public the value to Americans of fishing areas in distant seas or near foreign countries.

3. THE FISHERMEN.

In all maritime countries the fisheries have been recognized as constituting the best nursery or school for the training of hardy, brave, and efficient seamen. Accustomed from childhood to vicissitude and danger, trained to self-reliance and to meet the direst peril unflinchingly, fishermen become a self-supporting and invaluable militia of the sea—the natural bulwark of a nation—available to man its navy and protect it from invasion in time of war.

It is therefore important that the Government should possess full and reliable information concerning the nativity, the citizenship, the general characteristics and economic condition of those men who are employed in the American fisheries. This knowledge the Fish Commission seeks to supply through its inquiries, whereas it would be difficult, and might be impossible without it, for Congress to intelligently legislate on many matters affecting the fisheries and the fishermen.

4. VESSELS AND BOATS.

Special attention has been given to the study of fishing vessels and boats. It is well known that nothing conduces more to the success of the fisheries than the employment of those types of vessels and boats that are best adapted to the special conditions under which their operations must be carried on. The employment of unsuitable craft may not only result disastrously from a financial stand-point, but may be the cause of much destruction of life—a loss that often leaves its blight upon an important industry and seriously interferes with its progress. Such has too often been the case in the history of the American fisheries, and, as mentioned in a subsequent paragraph, it is only in recent years and through the influence of the Fish Commission that this great evil has been remedied in a large degree.

But it is not alone in building large ocean-going vessels that the fishermen need suggestion and assistance. Frequently success may depend simply on the possession of sufficient knowledge—a knowledge possessed by comparatively few white men—to enable the fishermen to build a cheap (possibly a primitive) boat with the materials at command, and which may, nevertheless, be useful and serve the purpose for which it is made until a change of circumstances renders it practicable to construct a more costly craft.

The Fish Commission aims, through its publications, to convey a full knowledge of fishing craft, and nothing short of this will enable our fishermen to attain that degree of success and security which they should have.

5. APPARATUS.

Man being recognized as “one of the chief destroyers of fish,” it is important that his influence upon their abundance, through the use of various devices for their capture, should be studied and determined. By a comprehensive examination and comparison of the fishing apparatus of this and other countries, it is practicable to introduce such as are most serviceable and discourage the use of those forms that may be less effective or liable to cause the destruction of important fisheries. The study of the commercial aspects of the fisheries not only embraces the quantities and values of the different forms of apparatus and the amount and value of fish taken, but it contemplates also a consideration of all details of form, construction, and location, with a view to furnish definite information to the Government whenever necessary, and with the additional object of publishing illustrated descriptions of the best forms for the benefit of the fishermen, as has elsewhere been intimated. The definite object sought is that of ascertaining the form of apparatus best adapted for use under certain conditions, which may be either local or seasonal. As with boats and vessels, a knowledge of the adaptability of fishing gear is of the greatest moment to the fishermen, for the simple reason that what might be specially effective in one locality, or at certain seasons might be, and often is, practically worthless under other conditions. Knowing the habits of any particular species which is an object of fishery, and understanding the local conditions where it is sought, the Commission aims to impart to the fisherman such information as will enable him to secure the best results.

6. FISHERY METHODS.

A study of the methods of fishing is intimately associated with a consideration of the apparatus employed. It, however, covers a much broader field and includes the whole subject of the art of capture and

the care and manipulation of fishery products on shipboard, by which they are put into a suitable condition to be landed or marketed. Success more frequently depends upon the proper and efficient management of fishing gear than upon the apparatus itself. And, again, big catches may mean anything but large profits if the fisherman lacks the special knowledge which will enable him to utilize to his best advantage the material which he has captured.

An important function of the Division of Fisheries is therefore to closely study this particular phase of the commercial fisheries and to place before the fishing interests of the United States the fullest information concerning the most approved methods employed in this and other countries.

7. UTILIZATION OF FISHERY PRODUCTS.

The proper and most effective utilization of fishery products opens up a wide field for study, experimentation, and suggestion. Although much has been done in this direction, much still remains to be accomplished, particularly in those localities where the most advanced ideas have not yet received the attention which their importance entitles them to.

The inquiry under this head embraces the whole question of curing, freezing, canning, or otherwise preparing fishery products for commercial purposes, and properly includes the utilization of secondary products of the fisheries, whereby much otherwise waste material is saved and the public benefited by the production of many useful articles of commerce. This subject is receiving the most careful consideration. Much has been done to disseminate knowledge among those interested in the fisheries, and the work has been conducted with special activity for the past two years. By the publication and distribution of papers dealing particularly on this subject it is proposed to place in the hands of fishery preparators all that is known in this or other lands respecting the best methods for utilization of fishery products.

8. TRANSPORTATION.

The matter of transportation is an important factor in the successful development of fishery industries. In a country having such broad proportions as the United States, the fate of the fishery may depend largely if not entirely on transportation. If the facilities are good and the charges reasonable, the industry thrives to the benefit alike of the fishermen and the transportation agencies. But without the means of distributing the catch or taking it to market in the best condition at a moderate cost, a profitable fishery could not be established, even supposing there was an abundance of fish to be taken.

This matter is being studied with a view to offering suggestions for improvement.

9. MARKETS.

Under this head is embraced a consideration of the wholesale fish markets—the receiving and distributing centers for fishery products—the sources of supply and the principal lines of distribution.

10. INTERNATIONAL RELATIONS.

The effect upon our commercial fisheries of relations of the United States with foreign countries is receiving careful consideration in connection with the general subject of studying the commercial fisheries

and whatever may influence them for good or evil. This includes the obtainment of a knowledge of the extent to which Americans are affected by the interpretation of treaties by other countries, or the administration of foreign laws, or by being excluded from jurisdictional waters adjacent to foreign countries. Connected with this is an examination into the question of bait supply; the effect upon our coast fisheries of withholding from American fishermen by Canada of full commercial privileges; and of a development of new methods and apparatus for securing a supply of bait by the fishermen on the outer banks.

MEANS AVAILABLE.

The available means for conducting the inquiry consisted (1) of an appropriation of \$10,000 for each of the fiscal years ending June 30, 1889 and 1890; (2) in addition to which \$5,000 was assigned each year, from the appropriation for scientific inquiry, for a "study of the methods and relations of the fisheries." By this arrangement the division had available each year \$15,000 for prosecuting its work.

NEED OF ECONOMY.

In view of the enormous extent of sea-coast and rivers to be canvassed, it has been necessary to practice the strictest economy, particularly in the matter of expenditure in the field. That the field agents have shown remarkable and praiseworthy care in this particular will be apparent when it is stated that the average daily expenditure per man, when traveling and engaged in canvassing the fisheries, has been only about \$2.50. This amount includes travel by rail, steam-boat, carriage, sail and row boats, street-car and ferry fares, all hotel bills and other expenses properly chargeable to the Government. It may also be said that it embraces long lines of travel, such as trips across the continent, and to the extreme southern and northeastern points of the United States.

The following itemized tabulated statement shows in detail the individual and average daily expenditure of statistical field agents of the U. S. Fish Commission while in the field, during the fiscal year ending June 30, 1890:

Name.	Days in field.	Expenses.	Daily average.
Wilcox, W. A.....	226	\$675. 75	\$2. 99
Stevenson, C. H.....	247	611. 39	2. 47
Hall, Ansley.....	262	527. 22	2. 01
Smith, H. M.....	71	240. 13	3. 38
Abbott, W. H.....	171	454. 20	2. 65
Alexander, A. B.....	62	109. 55	1. 76
Total.....	1, 039	2, 618. 24	2. 423

The following explanations may be made:

The expenditure of W. A. Wilcox includes travel along the Pacific coast and up the rivers northwardly from San Francisco to Puget Sound (passing twice over much of the ground), thence to Wood's Holl, Mass., along the coast of New England from New Bedford to Boston and return to Washington.

C. H. Stevenson went from Washington to New York, canvassed the coast of that State; thence to Maine, worked from Portland to Cape

Ann ; then along the coast of Connecticut, and returned to Washington.

Ansley Hall canvassed Rhode Island, the middle portion of the Maine coast, returned to Washington, and was then sent to study the fisheries of Massachusetts between Gloucester and Boston, and to complete data for 1889 in Rhode Island, whence he returned to Washington.

H. M. Smith canvassed the eastern half of Maine, assisted by W. H. Abbott. His expenditures include fares from Washington to Eastport, Me., and return ; also hire of teams employed in the work for himself and Abbott.

W. H. Abbott covered eastern Maine with Smith ; returned to Washington ; sent to Massachusetts to work up territory abandoned by Wilcox on account of sickness. His expenditures include fares from Washington to Eastport, Me., and return ; fares from Washington to Massachusetts and return.

It should be kept in mind, however, that the travel one way is chiefly only from point to point, following the trend of the coast, and is therefore much more expensive than direct travel. It is also important to consider that boats and teams must often be hired (with men to manage them), to visit points not otherwise accessible. This method of communication is usually expensive compared with the ordinary means of travel. The coast-line of some of the States is so broken by bays, estuaries, and islands that the actual extent is enormously increased. Thus, Maine has an actual coast-line of about 2,000 miles, every bit of which is more or less engaged in the fisheries. A straight line from the eastern extremity to Kittery on the southwest is only about one-tenth that distance.

A. B. Alexander canvassed San Francisco and the adjacent region bordering on San Francisco Bay, and the Sacramento River.

METHODS OF CONDUCTING THE WORK.

The methods employed in prosecuting the inquiry carried on by the Division of Fisheries are a result of, and are based upon, the experience of the Fish Commission from its establishment to the present time. In the early days of the Commission a common practice was to make personal inquiry of fishermen and others concerning statistics and the methods and relations of the commercial fisheries. But as the means then available did not permit of conducting such an inquiry upon a sufficiently extensive scale to cover even a single fishery resort was had from time to time to circulars, which were sent to those in fishing communities who were best informed. By these means much valuable information was acquired, though it follows, as a matter of course, that it was much less comprehensive and not usually so detailed as is contemplated in the inquiry now made. At a later date, in connection with the obtainment of the fishery census of 1880 and the collection of the vast amount of historical and other data obtained at that time, the methods of inquiry and research were expanded, though in their general features they remained about the same, the change being chiefly in the scope of the work, of which mention will be made further on.

In 1885 a new method was introduced by Professor Baird for the collection of statistics of certain vessel fisheries through the co-operation of the Treasury Department. By this method circulars are sent to all the collectors of customs where there are fishing vessels, and these are filled out from information furnished by some responsible person connected with each vessel.

It took some time to satisfactorily develop this part of the work, but experience brought gratifying results.

From the first there have been many enterprising and intelligent fishermen and fish-dealers (as well as others) who have exhibited a marked interest in and appreciation of that special branch of the Fish Commission work relating to statistics and the general investigation of the commercial fisheries. This has been more wide-spread, and the reliance upon and confidence in the Commission have increased as its work has become better understood. A gratifying result is that the Commission now receives much valuable and important assistance, free of charge, from those who are practically engaged in the fisheries, and who are anxious to aid the work, which they recognize as being of material advantage to the industries they are connected with.*

Among the material which has been gathered in this manner it is proper to mention the journals which have been kept by the fishermen, and which give us a full record of events transpiring upon vessels engaged in different fisheries, as well as the daily catch and other valuable information. With these should also be placed notes, many of them instructive and interesting, that are contributed from time to time by others.

But while much information has been gathered through the aid of the Treasury Department and the voluntary contributions alluded to, it will readily be seen that other means and methods must be adopted to secure a knowledge of the extensive shore and boat fisheries as well as of the whale and seal industries, none of which are covered by the inquiry made through the Treasury Department. Besides, it is important to verify the data received through the custom-houses and to fill in such gaps as will necessarily occur in this method. Therefore it becomes necessary, in order that a comprehensive knowledge may be obtained of the fishery industries of the United States, to make a personal canvass.

Trained experts are sent out who visit the fishing communities, and by careful and systematic inquiry secure all knowledge of the commercial aspects of the fisheries that it is practicable to obtain. Fishermen, fish-dealers (including market-men), curers, manufacturers, and others who have knowledge of fishery matters are interviewed, records are carefully examined (including those of fishing firms, railroads, express agencies, and custom-houses), and all other available sources of information are utilized with a view to making the inquiry as accurate and comprehensive as possible. When practicable the fishing grounds are visited, and the location of apparatus and the methods of fishing are studied and observed. When this can not be done the information is obtained from those who are best informed, and whose daily intercourse with the fishing grounds and the fisheries enables them to supply all needful information.

Elsewhere mention has been made of the personnel; here it is only necessary to say that the men employed as field agents (and who also assist in making the compilations) have been selected for their special

* It is noteworthy that, on many occasions within the past two years, the field agents of the Commission have been the recipients of many courtesies, and have been materially aided in their work by those carrying on the fisheries, who have generally given free access to their records. On some occasions boats and steamers owned by fishermen or fishing firms have been placed at the disposal of the Fish Commission agents free of charge, and frequently the owners have also tendered their services in a like generous manner to aid in the collecting of data which otherwise it might have been very difficult to secure. This generous consideration has made it possible to carry on the work with far less expense to the Government than would have been practicable under other conditions; and besides, it has resulted in the procurement of a great deal of knowledge which it is important to have, and which it would have been scarcely practicable to obtain without such co-operation.

fitness for the work in which they are engaged. They have received special training, and have generally had a long experience in the work. As a rule they are young men, graduates of the best schools, though some have become specially proficient from long business association with the fisheries, supplemented by extensive experience in the work they are now engaged upon.

Briefly summarized, the methods now adopted in this inquiry are as follows:

(1) Through the assistance and co-operation of the Treasury Department, statistics of the vessel fisheries are obtained on blanks sent to the collectors of customs, and filled out by the collectors with information gathered from the captains, owners, or agents at the time that the vessels apply to change or renew their papers. This part of the inquiry applies to all fishing vessels excepting those engaged in the seal, sea-elephant, and whale fisheries. This system of collecting statistics has become an important auxiliary in the Fish Commission work, while its inexpensiveness is a feature which recommends its continuance.

(2) A special inquiry is prosecuted by field agents, who visit the various localities where fishing is carried on, and besides collecting statistics of the shore, boat, whale, and seal fisheries, thus supplementing the work done through the Treasury Department, they make special inquiries concerning the fishing grounds, fishermen, vessels, and boats, apparatus, methods of fishing, etc. For the past two years agents of the Commission have been constantly in the field pursuing their investigations with indefatigable zeal and tireless energy. Employing such means of transportation as were available, they have managed to reach the most secluded and out-of-the-way places. They have often been called upon to make dangerous passages in open sail-boats to outlying islands, or to take mule-back rides over mountainous paths to reach a "fishery" in some isolated and otherwise uninhabited region. Again, it has been necessary for them to visit Chinese fishing camps on the Pacific coast, where the utmost tact and ingenuity of the investigator must be brought into requisition to gather from suspicious Celestials the information wanted. But by continued experience these field agents acquire a detective's skill in following clues, and they meet with success, though the difficulties encountered are often of such a character that one not equally well trained would find it impossible to overcome them.

(3) Statistical agents are permanently located in some of the large fishing centers. In addition to reporting the daily arrivals of vessels, receipts of fish, etc., they collect other important data, making monthly or semi-monthly reports which show the varying conditions of the fisheries, the fluctuations in abundance of the different fishing grounds, and also the comparative results obtained by the use of certain forms of apparatus or methods.

(4) Many voluntary and valuable contributions to a knowledge of the fisheries are received from those who are actively engaged in prosecuting such industries. These not only embrace journals of voyages (to which reference has already been made), but also relate to the employment of methods and apparatus, etc.

(5) An office force of clerks is engaged, under the direction of the assistant in charge of the division, in tabulating the returns and in preparing the reports and special papers relating to the fisheries, as well as maps and other illustrations. The field agents often engaged in this work after completing the investigation of localities to which they have been assigned.

WORK PERFORMED.

In the field.—Since the organization of Division of Fisheries, in the spring of 1888, the following has been accomplished in the field.

A comprehensive investigation has been made of the fisheries of the Pacific coast and rivers from San Diego to Puget Sound. An inquiry has also been made into the condition of the salmon fisheries of Alaska, in conjunction with researches carried on at the same time by the Division of Scientific Inquiry.

A study has been made of the coast and sea fisheries of all the Atlantic States, and of the Gulf of Mexico from Florida to Mississippi. These investigations cover the two years of 1887 and 1888. But in New England, the South Atlantic States and portions of the Pacific coast full data have also been obtained for 1889.

These researches and inquiries have been made by agents of the Fish Commission who have traveled from point to point and have obtained the requisite data with all possible accuracy and comprehensiveness of detail.

The following résumé shows the territory canvassed by each individual and the time occupied:

W. A. Wilcox: Began work on the fisheries of eastern Massachusetts and Connecticut on July 2, 1888; investigation discontinued August 15, 1888.

Detailed to make canvass of fisheries of Pacific coast and rivers from San Diego to Puget Sound November 15, 1888; investigation completed September 21, 1889; ordered to Wood's Holl, Mass., to complete reports and settle accounts.

Ordered to make investigation of fisheries of Massachusetts from Rhode Island State line to Boston; operations suspended on account of illness February 8, 1890; ordered to Washington to write up notes. On leave of absence without pay for two months from May 10, 1890.

Luther Maddocks: Ordered to make investigation of fisheries of Maine July 1, 1888, in vicinity of Boothbay; investigation suspended August 15, 1888.

Hugh M. Smith: Ordered to investigate the fisheries of Virginia, Maryland, Delaware, Pennsylvania, and New Jersey in conjunction with M. P. Snell. Began work July 12, 1888, and returned to Washington October 6, 1888.

Detailed to make investigation of fisheries of Maine from Eastport to Penobscot River August 8, 1889, assisted by W. H. Abbott. Completed work and returned to Washington October 18, 1889.

Merwin P. Snell: Ordered to assist H. M. Smith in investigation of fisheries of Maryland, Virginia, Delaware, Pennsylvania, and New Jersey. Began work July 12, 1888, returned to Washington December 31, 1888.

February 17, 1890, granted conditional leave of absence for one month, and resigned from service March 16, 1890, to accept another position.

William H. Abbott: April 4, 1889, was ordered to Elizabeth City, N. C., to complete investigation inaugurated by W. de C. Ravenel in North Carolina. Completed work and returned to Washington June 13, 1889.

Detailed to assist H. M. Smith in making an investigation of the fisheries of Maine, leaving Washington August 12, 1889. Completed investigation and returned to Washington November 14, 1889.

Ordered to complete work in Massachusetts abandoned by W. A. Wilcox on account of illness. Left Washington February 12, 1890; completed investigation and returned to Washington April 29, 1890.

W. de C. Ravenel: Ordered to make investigation of the fisheries of South Atlantic coast from Florida to Virginia. Began work December 3, 1888, and carried investigation as far north as the vicinity of Elizabeth City, N. C.; on March 27 was ordered to Washington and assigned to other duty.

On January 14, 1890, was ordered to make similar investigation for the year 1889. Began work at Charleston, S. C., and made canvass as far as Elizabeth City, N. C. Was ordered to Washington on other duty on April 1, 1890.

D. Edwin Collins: January 3, 1889, was ordered to make investigation of the fisheries of the Gulf States, including western Florida. Investigation abandoned at Scranton, Miss., April 22, 1889, on account of failing health. On sick leave of absence for one month from May 1, 1889. Granted leave of absence without pay for one month from June 1. Reported for duty July 1 and remained on duty one month. Compelled to abandon service on August 1, 1889, on account of continued ill health.

Ansley Hall: Ordered to duty to collect fishery statistics in Rhode Island May 7, 1889. Investigation completed August 19, 1889.

Detailed August 19, 1889, to make investigation of fisheries of Maine, beginning at Belfast and working south. Completed investigation and returned to Washington December 17.

February 11, 1890, was ordered to make investigation of fisheries of Massachusetts between Gloucester and Boston. After completing that work was directed to complete statistics of Rhode Island for 1889. Returned to Washington May 15, 1890.

Charles H. Stevenson: Detailed on May 6, 1889, to make investigation of fisheries of New York. Completing that work, was ordered to Wiscasset, Me., August 24. Made investigation of fisheries of western Maine, New Hampshire, and Massachusetts to Cape Ann, omitting Gloucester, finishing that work November 8, 1889.

Ordered to Connecticut November, 18, 1889, and completed investigation February 28, 1890. Ordered to Washington and granted leave of absence for ten days. Returned at expiration of leave, and directed to tabulate returns in office.

S. J. Martin: Employed at Gloucester, Mass., in collecting statistics of the daily receipts of fish from vessels and boats. He makes monthly and semi-monthly reports, showing the amount of fish landed by each vessel arriving at Gloucester, the locality where the fish were taken, etc.

F. F. Dimick: Appointed April 15, 1889. Employed at Boston, Mass., in collecting fishery statistics of that port. Submits a daily and monthly report, the latter showing the number of fares of fish landed at Boston, classified under headings to show the home port of each vessel; the quantity and value of each species, the price, the locality where taken, etc. The amount of receipts of the principal species from other ports, including importations, and the quantities taken by boat fishermen are also given.

E. F. Locke: Collected statistics of shore and vessel fisheries of Gloucester, Mass., for 1888.

In the office.—The following special reports, etc., have been published:

1. New forms of blank books for the use of field agents in collecting the statistics of the shore and vessel fisheries, with instructions for each.
2. American sardine industry in 1886.
3. Notes on certain fishery industries of Eastport, Maine, in 1886.

4. The beam-trawl fishery of Great Britain, with notes on beam-trawling in other European countries, etc. Fifty-seven illustrations.
5. Some reasons why the fishermen of Nova Scotia prefer to use salt-clams (*Mya arenaria*) for bait in the bank hand-line fishery.
6. Statistics respecting certain features of the vessel fisheries of the United States for the years 1886 to 1888.
7. Suggestions for the employment of improved types of vessels in the market fisheries, with notes on British fishing steamers. Twelve plates.

The following have been prepared and are now in type, or in course of publication:

8. A comprehensive and detailed illustrated review of the fisheries of the Great Lakes. Forty-four plates, including six maps.
9. Report upon the construction and equipment of the Schooner *Grampus*. Twenty-three illustrations.

The following have been submitted for printing:

10. Report upon the operations of the *Grampus* from March 15, 1887, to June 30, 1888, with notes and observations on fisheries, collections made, etc. Seventeen plates, including track chart.
11. Catalogue of the exhibit of the U. S. Fish Commission at the Centennial Exposition of the Ohio Valley and the Central States, held at Cincinnati, Ohio, July 4 to November 8, 1888.
12. Notes on the crab fishery of Crisfield, Md. Two plates.

The following are ready for publication:

13. Report upon the fishing vessels and boats of the United States, with material for nearly two hundred illustrations.
14. Report upon the principal types of fishing vessels and boats of foreign countries, with material for about two hundred illustrations.
15. Information concerning the American vessels involved in the Canadian fisheries controversy in 1886.
16. Report upon the inquiry concerning the stranding, abandonment, rescue, etc., of the Schooner *Grampus*.

The following are in course of preparation and well advanced:

17. Descriptive and statistical review of the fisheries of the Pacific coast from San Diego to Puget Sound. This will include a history of the Pacific cod fishery from its inception; history of salmon canning, and a review of the whale fishery for the past decade. It will be fully illustrated with plates and maps. The maps will show the location of canneries and all fixed apparatus, seine fisheries, gill-net reaches, oyster-beds, inshore fisheries, etc., on the coast and rivers.
18. Statistical tabulations for 1887 and 1888 for the coast and river fisheries of the Pacific States, and for the coast fisheries of the States bordering on the Atlantic Ocean and Gulf of Mexico. For many of the Atlantic States tabulations have been made of the fishery statistics for 1889 as well as for the two previous years.

Statistics of the shore and vessel fisheries of 1887-'88 have been tabulated for sixteen coast States, namely: Alabama, California, Connecticut, Delaware, Florida, Georgia, Maine, Maryland, New Hampshire, New Jersey, Oregon, Pennsylvania, Rhode Island, South Carolina, Virginia, and Washington.

Tabulations are well advanced for the following States: Louisiana, Massachusetts, Mississippi, North Carolina, New York, and Texas. It is proper to say, however, that full data has not yet been obtained of the shore fisheries of Louisiana, Mississippi, and Texas for the years named.

19. Report upon the Division of Fisheries for the fiscal year ending June 30, 1888.
20. Report upon the operations of the Division of Fisheries for the fiscal year ending June 30, 1889.
21. Report upon the participation of the U. S. Commission of Fish and Fisheries in the Centennial Exposition of the Ohio Valley and Central States, held at Cincinnati, Ohio, July 4 to November 8, 1888.

Data, more or less elaborated (in some cases nearly ready for publication), are available in the office for preparing special reports showing

the present condition of, and recent changes or improvements in, the following important fisheries:

22. The fresh halibut fishery.
23. The cod fishery.
24. The mackerel fishery.
25. The menhaden industry.
26. The market fishery, including New England fresh haddock fishery.
27. The sardine industry for 1887, 1888, and 1889.
28. The bluefish fishery.
29. The herring fishery.
30. The red snapper fishery.
31. The pound-net, weir, and trap fishery. The number and location of these forms of apparatus can be shown on maps.
32. The lobster fishery.
33. The oyster fishery.
34. The clam fishery.
35. The scallop fishery.
36. The whale fishery.
37. The sponge fishery.
38. The relative productiveness of the principal fishing grounds.
39. Relative effectiveness, as shown by catch, of different forms of apparatus of capture.
40. Nativity and citizenship of the coast and sea fishermen of the United States.
41. On the preparation of fishery products.
42. On certain forms of fishing apparatus, and utilization and operation of same. Many drawings and engravings are already completed, together with elaborated notes.

Mention may properly be made of the fact that the Division of Fisheries has been called upon to do a large amount of work in connection with the Fish Commission exhibit at the Centennial Exposition of the Ohio Valley and Central States, held at Cincinnati in 1888. The responsibility of preparing and conducting the Commission's exhibit at Cincinnati devolved upon the Assistant in charge of the Division of Fisheries, and several experts of the Division were detailed to assist in that work.

Besides (as has been indicated in the foregoing notes), this Division has been charged with important duties in connection with the work of the *Grampus*. It was necessary for the Assistant in charge to prepare reports on her construction and work, and also in the winter of 1888 and 1889, to conduct an official inquiry concerning the stranding, abandonment, rescue, etc., of the schooner, and to report upon the same. At the same time he had to superintend the making of necessary repairs and the fitting of the vessel for sea, as well as the selection of officers and the enlistment of seamen.

IMPORTANCE OF THE WORK.

The importance to the fishing interests of the United States of the work prosecuted by the Division of Fisheries can best be estimated in the light of what has already been accomplished by the Fish Commission in this special field of effort. But, in calling attention to this, it is proper to state that only the most noticeable results are mentioned—those that have had an important influence upon the welfare and development of the fisheries. They may be briefly summarized as follows:

- (1) The introduction of gill-nets in the cod-fishery resulting in an increased catch of large fish and an estimated annual saving to the fishermen of about \$50,000 in the single item of bait.*

* The gill-net cod fishery during the last two years has been less successful than usual, due chiefly, it is believed, to the prevalence on the New England coast of unusually warm weather in winter, which has seemingly prevented the schools of winter cod from approaching the coast in as great numbers as common.

(2) The dissemination of knowledge concerning the abundance of halibut near Iceland, resulting in the establishment from New England ports of the Icelandic salt-halibut fishery, the yearly product of which amounts to from about \$70,000 to \$100,000.

(3) The introduction of safer and swifter types of fishing vessels, resulting in a much greater immunity from loss of life and property, a better utilization of time, and a marked increase in profits (specially noteworthy in the market fishery), due to the improvement in speed, which renders it possible to market the catch in a much better condition than heretofore.

The importance of this change in the model and rig of fishing vessels, which was inaugurated through the efforts of the Commission, can not be estimated, but its beneficial effects may be partially understood when it is stated that in the ten years ending in 1883, the loss by foundering at sea, from Gloucester alone, amounted to eighty-two vessels, with a valuation of upwards of \$400,000, with crews amounting to eight hundred and ninety-five men, who thus lost their lives, leaving hundreds of widows and fatherless children in a destitute condition.

It is not difficult to comprehend the paralyzing influence exerted upon the fisheries by such losses, and there is reason for profound satisfaction in the thought that the fishing vessels now being built are modeled and rigged with a view to reducing disaster to the minimum, while their usefulness and efficiency are correspondingly increased.

(4) The preparation and publication of new designs for fishing vessels and boats*; these embodying the results of extensive studies of the fishing flotilla of the world, together with a consideration of the conditions under which they must be employed.

The following extracts from letters received from parties interested in the fisheries, or otherwise competent to judge, will convey an idea of the estimation in which such work is held:

We have received a copy of your valuable paper entitled "Suggestions for improvements in fishing vessels and boats." As far as we have examined same find it quite interesting and think your suggestions will prove of great value if followed by those about to construct new vessels.—(Shute & Merchant, Gloucester, Mass., April 19, 1890.)

Your publication, "Suggestions for improvements in fishing vessels and boats," was duly received. Accept my thanks for the above, which will be of much interest.—(John J. Pew, Gloucester, Mass., April 19, 1890.)

Many thanks for your paper on the employment of improved types of fishing vessels, etc. I don't want to part with my copy, as it has some important data regarding steamers, and would be very glad if you could send one to my son.—(Chief Eng. Alex. Henderson, U. S. Navy, March 29, 1890.)

Have not time but to skim through your paper, but I compliment you upon the thorough manner in which you got up such valuable information.—(W. V. Booth, Chicago, Ill., April 4, 1890.)

We beg to tender our sincere thanks for copy of your recent paper entitled, "Suggestions for improvements in fishing vessels," which we think will prove a great boon to those interested in the fishing industries of this country.—(Louch & Johuson Seattle, Wash., April 9, 1890.)

We acknowledge the receipt of your recent paper, "Suggestions for improvements in fishing vessels," etc., which we find very interesting, and herewith tender our sincere thanks for same.—(Fred. Wright, secretary Fishermen's Protective Union, Astoria, Oregon, April 12, 1890.)

Your work contains many excellent points, as I think steam-vessels in time will revolutionize the fish business, even on this coast.—(A. K. Demere, Punta Gorda, Fla., April 18, 1890.)

Your plan of fishing-cutter is excellent. If I have good success this season I shall build one for winter fishing.—(Jos. A. Smith, Port Hartford, San Luis Obispo County, Cal.)

* "Suggestions for the employment of improved types of vessels in the market fisheries, with notes on British fishing steamers," by J. W. Collins.

Your paper entitled, "Suggestions for improvements in fishing vessels," is at hand and I thank you for the same. It is very interesting to me as I am in the fishing business and have taken great pleasure in reading it.—(J. W. Hume, Brandon, Oregon, May 7, 1890.)

(5) The publication of monographs of the fisheries, including fishing grounds, fishing vessels and boats, methods of fishing, preparation of fishery products, etc. The dissemination of the knowledge embraced in these comprehensive treatises enables fishermen, packers, and dealers to become familiar with the most approved methods, and of the best localities for fishing. The constant demand upon the Commission for such information is sufficient evidence of its value and importance.

(6) The collection of statistical and other data bearing upon the commercial fisheries, whereby the executive and legislative branches of the Government have been kept well informed concerning the status of these industries. The Commission is now in a position to materially aid the Government in this particular.

(7) The assembling together of an exhaustive study and exhibition series of fishing appliances, including models of boats and vessels, illustrations of fishing scenes, etc.

(8) The furnishing of authoritative and definite information to fish dealers of the value of the thimble-eye mackerel (*Scomber pneumatophorus*) for food purposes, the result being a material enhancement of the profits of the mackerel fishery by establishing on a firm basis a remunerative market for this species.

(9) The probable establishment of a new fishery industry in the United States, that of beam-trawling, which the Commission is informed has already been begun as a result of its publications.

UTILIZATION OF INFORMATION.

From the foregoing it will be apparent that a very important function of the Fish Commission is the proper utilization of the information obtained by it. The publication of what is learned concerning the fisheries, though constituting a most important work, nevertheless falls far short of the maximum of desired or anticipated achievement. What gives special value to this inquiry is the intelligent interpretation of the data acquired whereby, when existing conditions are known, the Commission is often able to suggest improvements, or changes in methods, which may have a most important influence upon the development of certain fishery industries.

Thus the study of the methods and relations of the fisheries is planned to include within its scope all that experience has shown to be useful or profitable, and with the object in view of furnishing specific information to the Government or individuals; or to make suggestions from a consideration of the data obtained which may insure the prosperity of fishing communities.

The constantly increasing demand for technical and specific information, coming from all sections of the United States, shows conclusively the estimation in which this work is held by all who prosecute the fisheries and the growing reliance upon the Commission for success. Hardly a day passes without some demand upon the Commission for information. These demands take a very wide range, and cover in their scope nearly all phases of the methods, etc., of the commercial fisheries.

By Senator BLODGETT:

Q. You say you are assistant fish commissioner?—A. The title is

“assistant in charge of the division of fisheries.” There is no assistant fish commissioner under the present organization.

Q. You rank next to the Fish Commissioner in that Department?—A. I do. Mr. Rathbun, who is assistant in charge of the division of scientific inquiry, is next in that work.

By the CHAIRMAN:

Q. You are next to the Commissioner in charge of a special branch?—A. Yes, sir. The statement is a consideration of that organization and work of the division of fisheries.

Q. Let me ask you right here—when did you enter the service of the Commission?—A. I first entered the service of the Commission in connection with the census work, the obtainment of the fishery census, in 1879. I reported for duty in August of that year.

Q. You were then in the employ of the Census Bureau?—A. I was then on the rolls of the Census Bureau.

Q. When did you enter the actual service of the Commission after that?—A. I will explain that the following spring, that is in the spring of 1880, I was assigned to duty in connection with the Berlin Fisheries Exhibition and accompanied Professor Goode as one of the commission that went from the United States to Berlin on that occasion. In June, I think it was, I was put on the rolls of the Fish Commission.

Q. That was under Professor Baird's administration?—A. In 1880, yes, sir; under Professor Baird's administration.

Q. Will you just sketch your connection with the Commission up to the time that that commenced?—A. After my return from the Fisheries Exhibition at Berlin I was engaged for a few weeks in the preparation and elaboration of notes which had been collected there. After those were completed I again entered upon the field work, collecting statistics and other information concerning the fisheries. This work continued until the latter part of December, 1880.

Q. 1880?—A. Yes, sir; 1880. From that time until the summer of 1882 I was engaged chiefly in the compilation and preparation of reports upon the American fisheries, including the making of a large number of drawings for illustrations.

Q. Representing what?—A. Representing the different phases of the fisheries. Many of those appear in the Report of the Fisheries and Fishing Industries of the United States.

Q. When you speak of drawing do you mean fish or boats and appliances?—A. The drawings represented vessels, fishing scenes, etc., illustrative of the methods of fishing, and apparatus. In the spring of 1882 I made a cruise on the steamer *Fish Hawk* to the lower part of Chesapeake Bay to investigate the appearance or occurrence of shad at that season.

Q. I do not care about having so much of detail. I merely wanted to know in a general way if you had been actively connected with the Commission right along?—A. I thought perhaps it would be better for me to sketch briefly the outline of the work I had accomplished in the Fish Commission so that the committee might have a better understanding.

Q. But we are not going so much in detail. It will make it too voluminous and consume too much time.—A. In the summer of 1882 I was assigned to duty in connection with the preparation of an exhibit to be made by the United States at the International Fisheries Exhibition at London, which took place in 1883. In the spring of the latter year I accompanied Professor Goode to London and remained with him there until he returned about October.

Q. How did our fishery exhibit compare with those of other countries at this exhibition at London?—A. Most favorably. It received the greatest possible praise, and was conceded by all to be superior to every other exhibit made. After returning from London I made a cruise on the *Albatross* for observing the movements of mackerel when they were migrating from the New England coast southward. From that time until 1885 I was engaged chiefly in the preparation of reports upon the fisheries, and so on, including illustrative material.

In January, 1885, I joined the *Albatross* and made a cruise in her to the Gulf of Mexico to investigate the fisheries of that region, and a report of the work accomplished has been published, as have also reports upon other investigations in which I had previously been concerned.

In the summer of 1885 I made another cruise to the Grand Bank of Newfoundland and other intervening ocean banks for the purpose of studying the condition of the cod fisheries in those regions. In the same summer I was assigned to the duty of designing and preparing the specifications for the schooner *Grampus*. The work was completed in the fall, and during the following winter I had charge of the construction of the *Grampus*. After she was built and went into commission, on the 5th of June, 1886, I was officially in command of her. It is proper to say, however, that during the two years or thereabouts I held command of her I was chiefly employed in other duties which frequently took me to Washington, when the actual command was delegated to the first officer.

Q. What was your compensation when in charge of the *Grampus*?—A. \$1,800. It was increased to \$2,000 by Professor Goode in November, I think, 1887.

I will say, in continuing this, that during the summer of 1887 I made a cruise on the *Grampus* to the Gulf of St. Lawrence and around the island of Newfoundland and along the shores of southern Labrador to ascertain the occurrence or non-occurrence of mackerel in those regions. It will probably be remembered by the committee that in 1887 and the previous year mackerel were very scarce and reports had reached the Fish Commission that they had occurred in greater or less abundance on the northeast coast of Newfoundland and along the Labrador shore, particularly in the Strait of Belle Isle. Professor Baird therefore concluded that it was an important matter to send the *Grampus* on that expedition in order that a full knowledge of the facts could be obtained, and in case mackerel had been met with, a plan was arranged for the *Grampus* to immediately sail to the nearest port where telegraphic communication could be had with the United States and to send the fullest information to the Commissioner for the benefit of the —

Q. If there were indications of their return to our coast?—A. If we had found them in abundance on those coasts which could be easily reached by our fishing vessels.

Q. What position did you occupy at the time the present Commissioner was appointed?—A. I was officially in charge of the *Grampus*. I had been ordered to Washington by Professor Goode to prepare maps for the use of the International Fisheries Commission which was then engaged in negotiating a treaty—

Q. With Great Britain?—A. Yes, sir. These maps were colored and showed the distribution and areas of abundance of our principal food-fishes in the northwestern Atlantic and also the baiting stations, the distribution of bait species, and the principal fishing ports there, etc.

I was also kept here to prepare notes regarding certain phases of the fisheries and to confer with the Commission as they had occasion to call upon me for information.

Q. How soon after the present Commissioner entered upon his duties was your position changed?—A. The present Commissioner, if my memory serves me right, qualified on February the 21st after his confirmation, which I think occurred the previous day.

Q. 1888?—A. 1888; and in the latter part of April, or early in May, I was ordered to Gloucester on duty, with the purpose of making the necessary preparations for a trip to the Pacific coast, where I was to make a reconnaissance of the fisheries of that region. I had made my preparations for the trip, and was expecting orders when I received a telegram to go to Washington. After my arrival in Washington I was appointed in charge of the division of fisheries, on May 24.

Q. When you received that appointment was your salary increased?—A. Yes, sir.

Q. From what sum to what sum?—A. From \$2,000 per annum to \$2,400.

Q. And the statement is a statement of the organization and duties of your position?—A. Yes, sir. I will explain what might otherwise not appear clear to the committee, that it has been the practice of the Commissioner, in the interest of economy, to assign to the Division of Fisheries, temporarily, certain gentlemen who are embraced under the head of the division of fish culture. The work of these gentlemen is most active in certain seasons of the year in fish-cultural duties, and during the rest of the season they are able to attend to such work as devolves upon them in the Division of Fish culture, and still give to the division of fisheries a great deal of assistance. So that their employment is in the interest of economy, or rather it enables the Commission to get from them a large amount of work that it would not otherwise secure.

Q. What is the difference between the work of the Division of Fisheries and that of the Division of Fish culture?—A. The work of the Division of Fisheries consists in collecting the statistics of the fisheries and in studying the methods and relations, so that we get a comprehensive knowledge of all that pertains to the prosecution of the commercial fisheries. The Division of Fish culture has to do with the propagation of food-fishes and their distribution.

Q. The artificial propagation?—A. Yes, sir.

Q. I think I understand now the difference.—A. I was going to cite, for the information of the committee, the case of Mr. E. F. Locke, who has been in charge of the hatchery at Gloucester, Mass. The work of hatching cod is carried on in the winter, beginning usually in October and continuing through until May. During the rest of the year Mr. Locke is simply janitor of the station or hatchery, as it is necessary to have some one there to look after the property; but it is entirely feasible for him to attend to that duty and still give a full day's work each day to the collection of fisheries statistics at that port.

Q. As to the catch?—A. As to the amount of fish taken?

Q. And the number of boats and men employed?—A. The number of vessels employed in the fish trade, etc. He is at work at that now. That is one of the points I had not fully covered.

Q. Do you have anything to do with the appointment of your subordinate officers within your division; clerks in your office, etc.?—A. I recommend them for appointment.

Q. And the Commissioner appoints upon that recommendation or otherwise, as the case may be?—A. Yes, sir.

Q. Upon your appointment to your present position was it a new classification, new arrangement of the work?—A. It was a new organization.

Q. To apply to the old character of work but under new arrangements, was it?—A. I have explained in this statement fully, I think, in regard to that.

Q. You have described there fully the whole scope of your work?—A. I think fully enough for this purpose.

Q. Let me ask you this question, for some criticism has been made in regard to it. When you were appointed to your present position by Professor Baird your salary was \$2,400?—A. Pardon me—not by Professor Baird.

Q. I mean by the present Commissioner?—A. My salary was \$2,400.

Q. Has that salary been increased since then?—A. It has, to \$2,700.

Q. When was that increased, or about when?—A. I think about October, 1889.

Q. At the time of the increase had your duties and responsibilities been increased, or were they the same as when you were first appointed? That is, what was the occasion, what was the reason for the increase?—

A. The reason for the increase, as I understood it, was chiefly that the salary previously paid was not considered adequate to the duties I had to perform. I would like to have it understood by the committee that in addition to my duties in charge of this division I have had much else to do. I have had to prepare the reports of the construction of and work on the *Grampus*. I am generally called upon to supervise or decide upon all repairs made to the *Grampus* and upon many other things that appertain to her work and welfare. I have also had to prepare a catalogue and must report upon the participation of the Fish Commission in the Exposition at Cincinnati in 1888. I will say to the committee that my duties have been so onerous since I assumed charge of this position that it is rarely the case that I do not have to work at night. Generally my working hours extend from a quarter to 9 in the morning, at which time I reach the office, until 10 o'clock at night.

Q. You do not come within the eight-hour law?—A. Hardly; I never did. For the years I have been connected with the Fish Commission I have always made a practice of working overtime, as the records of the National Museum and Smithsonian Institution, where I formerly had my office, will show.

By Senator BLODGETT:

Q. Are you a relative of Commissioner McDonald?—A. I am not.

By the CHAIRMAN:

Q. In your statement you give a list of the employés in your office, so to speak, and their salaries. Were all of them in the employ of the Commission at the time you assumed your duties?—A. They were. Those in the first list.

Q. Have you made any new appointments since the first organization of the office?—A. I have recommended several appointments.

Q. Have they been made?—A. They have.

Q. Are they included in this list?—A. No, sir; that is the list of the first organization, and all of the persons included there were in the Commission and on salary before I was appointed in charge of the division.

Q. Subsequently have you made any statement as to changes in that

list and new appointments?—A. I have not made a full statement of all the appointments, but will do so if the committee desire it.

Q. In one of those newspaper articles it was charged that you had procured the appointment in your division of several relatives of yours. How is that; is it so or not?—A. It is true only to this extent—

Q. I allude to those newspaper articles which were published and gave rise to this inquiry?—A. I recommended the appointment of my daughter, Lillian M. Collins, as a clerk in my division.

Q. Was she appointed?—A. Yes, sir; she was appointed.

Q. At what compensation?—A. At a compensation of \$50 per month.

Q. Is she an accountant or a clerk?—A. She is a clerk, engaged in special work.

Q. Of what character?—A. Lillian M. Collins first worked for the U. S. Fish Commission in the winter of 1885–86. Both she and my other two daughters assisted me in my official work to a greater or less extent for several months while the *Grampus* was being built.

I will explain that the hull and spars of the *Grampus* were constructed at Noank, Conn.; the steam winchlass and boiler were made at Providence, R. I.; the sails, rigging, cables, anchors, and boats were obtained at Gloucester, Mass., and the rest of the equipment was purchased chiefly at Boston, Mass. It devolved upon me to prepare in writing several copies of the specifications of all articles entering into the equipment of the vessel with the exception of the steam apparatus, and also to attend to the correspondence inviting bids and to draw up the requisite contracts. In addition to this I had to superintend the preparation of all this material as well as to look after the construction of the vessel's hull. At the same time I was engaged in the preparation of reports for publication and gave to them every moment that could be spared from other duties. With all this accumulation of duties it often happened that it was impossible for me to get along without assistance, and for this reason sometimes one and sometimes all three of my daughters aided in the work. None of them received any pay, although Professor Baird authorized the payment of Lillian M. Collins.

The latter was first appointed to temporary duty by Prof. G. Brown Goode on October 1, 1887, and continued on pay at \$40 per month for three months, until December 31. She did considerable work for the Commission, however, in the fall of 1887, before she was paid, and also in January and February of 1888.

She was reappointed by the present Commissioner, Colonel McDonald, on April 8, 1889, at \$50 per month and assigned to special work of an editorial character. Her work consists chiefly of classifying and arranging newspaper clippings, so as to make them most convenient for reference in order that all information of this nature may be easily available to the Commission.

At the time of her appointment the Commission had on hand somewhere between 15,000 and 20,000 newspaper clippings. Most of this material was unassorted, and at the best only a rough classification had been attempted, so that a great amount of time was required in order to find any particular item which might be needed, while it was evident that much of the material was wholly worthless because of the inexpediency of looking through such a mass of data in search of any item that might be required.

Here I beg to file with the committee copies of correspondence relative to that.

The correspondence is as follows :

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., December 26, 1885.

Capt. J. W. COLLINS,
Gloucester, Mass. :

DEAR SIR: Your letter requesting authority to employ your daughter at \$5 a week for clerical work was referred to me on my return, and I write to authorize you to engage her temporarily and that you will advise me about how long you deem it necessary to have this additional clerical assistance.

Very truly, yours,

SPENCER F. BAIRD,
Commissioner.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., April 3, 1889.

Col. M. McDONALD,
U. S. Fish Commissioner, City :

DEAR COLONEL McDONALD: I inclose requisition for the employment of Lillian M. Collins in the work of the division of fisheries. The special work which I desire her to do now is to classify and arrange newspaper clippings, etc., so that they will be available as soon as may be for use in my division. This seems demanded by the necessity that arises almost every day to consult such data when I am called upon for information. In the present condition of the material much time is lost by myself and my clerks in hunting through a mass of unassorted clippings, and often it is impossible to find what is needed, though it may be in our possession.

This recommendation is made necessary also by the fact that the accumulation of such material is so great that Mrs. Palmer is entirely unable to manage it, if well, and unfortunately she is ill at present and will probably not be able to do much for some time.

Very respectfully,

J. W. COLLINS.

By the CHAIRMAN:

Q. It has been charged before the committee that about the time of the present Commissioner's appointment you made quite an extended trip working up influence in favor of his confirmation, attending exclusively to that while your pay continued as in the discharge of your duties. How is that? Did you do any work of that character?—A. I was not out of Washington, to the best of my recollection, from a date several weeks before the Commissioner's appointment until after his confirmation. I was confined to the house by illness for a week immediately after his appointment.

A. You gave no time to working up influence and causing letters to be written to Senators favoring the confirmation of the present Commissioner?—A. Not in office time. The only letter that I wrote—

Q. If you wrote any please state it so that we may know the full extent of your assistance?—A. The only letter of that character I have any recollection of writing was one addressed to you, at your request.

Q. Yes; I remember of receiving one. You took no time from your duties in traveling and working up that influence with Senators?—A. No, sir; I did not.

Q. The present Commissioner was connected with the Commission before his appointment as Commissioner?—A. The present Commissioner, to the best of my knowledge, was connected with the Fish Commission in carrying on the fishery census work in 1879, and has been connected with it ever since.

Q. It has been charged in some of the newspaper articles which have been published that there is no discipline at this central station; that the employes in the different rooms or departments there are in the habit of coming late and being away at noon quite a time, and leaving before 4 o'clock, and that there is generally a lax condition of discipline. What is your observation on that point?—A. My observation is quite to the contrary.

Q. Do the employés in your office report promptly?—A. They do.

Q. And remain until 4 o'clock?—A. And remain until 4 o'clock or until the office closed. They frequently remain later. In many cases they work at night.

Q. Do they receive extra compensation where they work at night?—

A. No, sir. I will say that on many occasions it has been necessary for many of them to work late at night, until 10 or 11 o'clock p. m. When we were preparing the exhibit for Cincinnati in the summer of 1888, the people who were assisting me, as well as myself, generally worked until midnight, and that system of work was continued after we reached Cincinnati.

Q. Let me ask you if you have any knowledge of the preparation of some apparatus devised and fitted up with a view to the shipment of fish to Germany last summer?—A. I have no knowledge whatever, except hearsay.

Q. Is your daughter, whom you have spoken of, the only relative you have in your office?—A. She is.

Q. And the only relative you have connected with the Commission?—

A. The only relative I have connected with the Commission or any Government service as far as I know.

Q. Have the fishermen of the coast adopted the plans or suggestions which have been furnished by the Commission as to the construction of their fishing boats within the last few years? Has there been any particular change in the style of boats used by the fishermen?—A. There has been a marked change.

Q. Has that change been brought about by suggestions from the Department?—A. Undoubtedly it has. I will say to the committee that as early as the spring of 1882 I reached the conclusion that very great error had been made by our builders of fishing vessels in that they made the vessels too wide and too shallow for the service for which they were employed. In consequence, it frequently happened in gales that they were capsized or knocked down by heavy seas, and not having their center of gravity low enough they failed to right again and consequently filled, going down with all hands. It was not an unusual thing years ago, as the records will show, for as many as eight or ten and sometimes more vessels to be lost in a single gale, and with crews amounting to eighty or ninety or a hundred men. At first I wrote a series of letters and had them published in the Cape Ann Advertiser, at Gloucester, advocating a change in the vessels both in form and rig, and when Professor Baird put into my hands the designing of the *Grampus*, I embodied the ideas I had in her form and rig.

Q. Was she considered to be an improvement upon former vessels when you came to use her?—A. Decidedly so. She has proved to be not only an excellent sea boat, but she is very much swifter than the vessels previously used. Starting from about the time she was built, there has been a very marked improvement in the construction of fishing vessels so far as relates to their form and rig, and the most skillful designers have been employed to prepare the plans and specifications of fishing vessels.

Q. And they have been quite generally adopted?—A. Very generally adopted. The change has been particularly beneficial in that not only are the vessels more seaworthy, but they are vastly swifter.

Q. There are a few general questions I would like to ask you. It has been charged that in the administration of the office Commissioner McDonald indulges in more or less favoritism; that he has his favorites

and pets who are granted unusual privileges and advancement in pay, etc., and that the salaries of others who have been in the service; many who were in the service under Professor Baird, who did not come within his special favor, have not been increased, and they have not been advanced as they should have been. What is your observation on that point?—A. My observation is that Colonel McDonald has been exceedingly conscientious in all matters appertaining to the administration of the Fish Commission, and it is my thorough conviction that wherever promotions have been made they have been made in consideration of the usefulness of those who have received the promotions.

Q. It has been charged that he is governed by political considerations; that is, that he, being a Democrat, has been trying to appoint Democrats rather than Republicans. Do you know anything about that?—A. So far as my observation is concerned—I know a good deal about it—I can positively assert that to the best of my knowledge there has never been any such consideration since he has been Commissioner.

Q. What you intend to convey is that you think he is not governed by any consideration as to the politics of the person appointed?—A. That is what I wish to convey. In the appointments in my own division the question has never been asked by him what the politics of any individual was, and that has been the general practice in the Fish Commission ever since I have been connected with it.

Q. It has not been a political department?—A. Never.

Q. What would be the effect and value of the Commission if it were under political influences, and if in the change of administration employes were dismissed and others of the same politics as the controlling party were appointed?—A. I think it would rapidly deteriorate and that its usefulness to the country would vanish in a very brief time.

Q. Experience and thorough education in the various branches are essential to its success?—A. It is absolutely necessary, and perhaps more so in the Fish Commission than in any other department, even among the scientific departments of the Government.

Q. Do you know Mr. E. I. Rogers?—A. I do.

Q. It has been charged that he has not received proper advancement, and that he is entitled to receive more than he does receive because he is not a favorite of the Commissioner. What would you say on that point?—A. I am fully convinced that it is not a question of favor or lack of favor.

Q. Is Mr. Rogers an efficient man in his position; is he a good draughtsman?—A. So far as his draughting work is concerned, his copying of maps or plans, I am not so able to speak perhaps as others would be. He has done a little work of that nature for me, but not very much, and usually of late it has been satisfactory. He has also made some drawings for me, what are usually termed free-hand drawings. I will say that Mr. Rogers has improved somewhat in his work recently, and in free-hand drawing, but he receives the same salary I think that a young gentleman received who was with me until last year and who was a very proficient artist.

Q. More so than Mr. Rogers?—A. Yes, sir.

Q. And he received the same pay which Mr. Rogers received?—A. He received the same pay, \$900, as Mr. Rogers receives.

By Senator SQUIRE:

Q. Did you fix his pay or did the Commissioner?—A. I recommended his pay. In fact I recommended an increase in his pay. I had him at work prior to the time I received charge of the Division of Fisheries. He was at work under my direction and acquired great efficiency,

but he finally resigned to attend an art school in New York. Since then he has done a little work for me by piece-work.

By the CHAIRMAN:

Q. What was his name?—A. Charles B. Hudon.

By Senator SQUIRE:

Q. Is there any regulation or rule or practice upon which you go in making your recommendations or in assigning salaries to individuals? Is there any plan or scheme, or does it depend solely upon the judgment of yourself or the Commissioner at the time? Do you have any system in regard to it so that one class of men receive pay at a certain rate per annum or per month, and another receives another rate of compensation in proportion to their skill, or is it a matter of judgment at the time and decision upon the part of yourself and the Commissioner?—A. There is no system such as has been adopted in the other Departments of the Government, and in my judgment it would not be practicable to have such a system without materially injuring the work.

Q. Do you think it is better to leave it entirely to the view of the Commissioner or to those who recommend him at the time, or to have some regular system there so that men might look forward to promotions as they do in other branches of the service—a graduated scale of salary?—A. If there was a graduated scale of salaries and a regular system such as obtains in the Departments——

By the CHAIRMAN:

Q. That is, class 1, class 2, and class 3?—A. It seems to me that the development of the work, its energies, would be largely lost. The promotions now are made entirely because of efficiency. For instance, I have a clerk whom I find not only efficient but zealous enough so that he will work twelve to sixteen hours a day.

Q. Occasionally. You do not mean steadily of course?—A. Almost steadily.

By Senator SQUIRE:

Q. Those cases are rare?—A. They are not specially rare in my division. My field agents who go out into the field to collect fish statistics and other information generally work from eleven to fifteen hours a day. They have to do it, and their efficiency depends largely upon that.

Q. Upon what?—A. Largely upon the fact that they are willing to work overtime, and do it.

Senator SQUIRE. Would not that efficiency be stimulated if there was prospect of increase by reason of the regulations governing the increase of salaries from time to time, or promotion?

By the CHAIRMAN:

Q. I understood you to say that the promotions and increases in compensation are made in consequence of efficiency and devotion to the work?—A. That is what I intended to convey. That is the rule that applies now. If a man is found specially efficient and zealous in the work, if he is willing to throw into it all of his energies, and he seems to comprehend quickly matters with which he has to deal, he is promoted.

By Senator SQUIRE:

Q. As I understand you, at the present time you think that all these promotions are made for merit or for meritorious services and because the

increase of salary is deserved. You of course speak of matters as they exist now under your observation. Might not this power be used at a future time without reference to this efficiency, that is, subject to the whim of the Commissioner altogether? Might not it be dangerous to allow this institution, which has gone on in a sort of a peculiar way, to continue on in that way?—A. It might be dangerous in the hands of an unscrupulous person, but the fact that the Fish Commission has been in existence for nineteen years, that it has been conducted upon that system, and that it has accomplished results the value of which I think no one questions, is perhaps a good reason why a change should not be made without very careful consideration.

Q. That might be true of other branches of the Government; but should this be an exception? You are an expert. I speak to you because being there so many years, perhaps you have mature judgment about it; and you have had so many opportunities for judging that your views on that point are valuable, no doubt. I ask you whether the danger is not so great that the time has come—in other words, that there should be a different system, something that should be regulated by law and not purely by the judgment of the Commissioner at the time, or in consequence of any whim or humor he might be in in regard to any man?—A. If I am correctly informed, the Fish Commission is not entirely an exception under the Government. I think that in several of the so-called scientific bureaus promotions are made on the judgment of the person in charge.

Q. And offices created?—A. And offices created.

By the CHAIRMAN:

Q. What branches? Please specify some of them.—A. The National Museum may be taken as one, in which I think I am correct in asserting that promotions are made on the judgment or recommendation of the person in charge, or on his appointment.

Q. What would be the effect of a rule like this, that after a person, a clerk, in any position had served three years and had done his work well he should be advanced under a rigid rule of that character?—A. In the Fish Commission I think that any benefits that might accrue from a rigid rule of that nature would be more than counterbalanced by the disadvantages under which it would place the Commissioner. I suppose that it is well known to the committee that there is a great variety of ability shown by different men. I find in my own work that one man will grasp the situation in a year's training and be able to do as well or better than one who may have had considerably longer experience.

By Senator SQUIRE:

Q. In other words, you would not be governed by the element of time in making promotions. Ought there not to be some system about it? For instance, draughtsmen of the first class and draughtsmen of the second class, and so on in regard to that system. Then in regard to the fish culturists, as they acquire skill and ability and you repose confidence in them, they should be promoted from one class to another in consequence of good behavior and efficiency.

The CHAIRMAN. I understand that that is the existing condition of things.

The WITNESS. Practically.

The CHAIRMAN. That if a man after being employed a certain time becomes efficient and all that and makes himself valuable, he is more apt to be advanced than another man who may have been in the service a longer time?

Senator SQUIRE. Yes; but is there anything now in the present status of the Commission that makes it incumbent on the Commissioner to advance a man in proportion to his merits; or is there anything to prevent the advancement of a man disproportionately to his work, purely for personal or political reasons? Could not a man's salary be advanced simply by mere direction at the moment—advance this man's salary from \$2,000 to \$2,500 or to \$3,500, or is there any limit anywhere? Can not he make it \$5,000 as well as to make it \$2,000.

The WITNESS. That seems to me a point which can better be considered by the commissioner.

Senator SQUIRE. You are bearing on that branch of the question. I am speaking to you as a man of judgment, as a man who has had great experience in this direction. I do not ask you to step in and criticise this thing. We are considering this question, and your views upon it are as good as those of any one else that I know.

The CHAIRMAN. There is no law fixing the merit of the clerks. In the Treasury Department we appropriate for a certain number of clerks in a certain department, and a certain number in another department, at a certain fixed salary. Your point is that there is no rule governing salaries here.

Senator SQUIRE. Nothing that a man can look forward to except the approbation at the moment.

The CHAIRMAN. I was going to say this, that in this department, as I understand it, there are no salaries fixed by law; there is no rule of promotion fixed by law; it is all within the judgment and discretion of the Commissioner; while in the Treasury Department, for instance, there are certain fixed grades with certain fixed salaries attached to those grades, and advancements are made or promotions are made upon the action of the Secretary of the Treasury. He can promote from one grade to another, and when that promotion is made it is from a \$1,200 position to a \$1,400 position. The Fish Commission is upon a different basis. That is the idea.

Senator SQUIRE. I will ask Captain Collins whether, in his opinion and judgment, after this growth has been reached, after the Commission has assumed its present proportion, the time has not arrived when there should be some regulation of the salary by law or by a system other than that of the whim or judgment or favor of the Commissioner at the moment.

Senator BLODGETT. It does not necessarily follow that the promotions will be made in their order even after that. It will be left discretionary with the head of the department to make promotions, as it is in all departments.

The WITNESS. That is the point I was going to make, that it would still remain in the discretion of the head of the department to promote any individual whose salary may be fixed by law. But I do not understand that even in the larger Departments at the present time the Secretary is prohibited from advancing a man to any position for which in his judgment he is fitted.

The CHAIRMAN. When he is fitted he goes into a class at a certain fixed salary?

The WITNESS. Yes, sir.

Senator BLODGETT. What would be the objection? Here is a draughtsman who thinks he ought to receive a higher compensation. He has been there perhaps for years and he thinks his work is good. Now what would be the objection; would it not be proper that there should be classes? For example, I might say the same with regard to fish cult-

urists, as you call them, whether there should not be gradations in their classes?

The CHAIRMAN. You mean fixed by law? Of course there are gradations now.

Senator BLODGETT. Yes, sir; I mean by law.

The WITNESS. There would be in my opinion nothing urged against that excepting in the interest of economy.

Senator BLODGETT. To be left discretionary with the Commissioner to make promotions if he thought them worthy even after these classes were established.

Senator SQUIRE. Yes, sir.

The WITNESS. My experience with the Fish Commission teaches me this, that is, that the salaries paid by the Commission in proportion to the duties performed are very much lower than in the other departments, and if they should be established by law they would probably be put on the same basis as they are in the other departments, and would bring it to a certain extent under departmental routine; at least to that extent. Then the question might arise, or the effect might be this, that being under that routine, whether there would be the same zeal and energy displayed that is noticeable at the present time in the work of the Commission. I take it for granted that there are very few of the people in the larger departments who work much overtime, and I know that in the Fish Commission it is a common thing.

By Senator SQUIRE:

Q. Please give me an idea of your operations on the Pacific coast. State it briefly.—A. The operations of the Fish Commission on the Pacific coast within the past two years have been far more extensive and comprehensive than ever before. I will only mention now incidentally the work of the *Albatross*, of which Mr. Rathbun, who is in charge of the scientific inquiry, can give you a more comprehensive account. That work comes particularly under his charge and jurisdiction. It may perhaps be enough for me to say, briefly, that the *Albatross* has investigated the fishing grounds on the west coast from Lower California to Behring Sea, and in addition to mapping the banks has ascertained the value of them for fishing purposes. My own work, or the work prosecuted under my charge, covers an investigation of the coast and sea fisheries, so far as they relate to commercial purposes, from San Diego to Puget Sound, and also a study of the salmon fisheries of Alaska in conjunction with the investigation made last summer under the direction of the scientific inquiry. I have aimed to get the fullest information, statistical and otherwise, of the fisheries of the Pacific coast and rivers, and a comprehensive illustrated report is now in the course of preparation and is well advanced. I have already shown you some of the maps that have been drawn to illustrate the fisheries of that region.

Q. Take, for instance, in the vicinity of the State of Washington. Have you found any indications of extensive fishing banks in that vicinity?—

A. There have been fishing banks found by the *Albatross* off the west coast of Washington, but, as I have said, I would prefer that Mr. Rathbun would explain that to you, because he has the maps and the whole thing at his fingers' ends.

Q. This inquiry you are speaking of now relates to the fish that already exist there and not to the placing of any spawn or any young fish out there. Have you had that in charge too?—A. No, sir.

Q. You have had nothing to do with that?—A. I have nothing to do with fish-culture operations. My duty is simply to study the methods

and relations of the fisheries to and obtain the statistics of them commercially.

Q. From what you have already learned, have you formed an opinion as to the commercial value of the fishing grounds on the Pacific coast; have you formed a definite opinion as to their value?—A. I have formed an opinion so far as the fishing grounds are now known, taken in conjunction with the methods of fishing.

Q. Now practiced?—A. Now practiced.

By the CHAIRMAN:

Q. Are they of a good deal of value?—A. Undoubtedly the fisheries of the Pacific coast will reach a great value in the future. They are now, as compared with our Atlantic fisheries, in an early stage of development, and they require a larger population for market. They need a larger aggregation of the people on the Pacific coast to constitute the necessary markets.

By Senator SQUIRE:

Q. Under the present methods of cold-storage shipments, etc., could they not be shipped through to the East? They are doing it already I believe.—A. Yes, sir; the salmon fisheries can be improved very materially by the new methods of transportation. The only drawback is the high rate of transportation.

Q. What other fish are there in such quantities as to be favorably considered by you in reference to their commercial value—what other kinds of fish besides salmon?—A. The principal kinds are the cod and halibut and various species of the so-called rock-cod. There are also on the coast of California the bonito, mackerel, and various other species of food-fishes.

Q. You do not know anything about the details of the effort to introduce the lobster there in the waters of Puget Sound?—A. I only know that lobsters have been sent there by the Fish Commission, and that they were planted in those waters.

By the CHAIRMAN:

Q. Do you know anything of the result of that experiment?—A. It is too early yet to have the results.

By Senator SQUIRE:

Q. Your efforts have been connected with the ascertainment, first, of what fish there are there; stating what fish there are there and their probable future commercial value?—A. My efforts have been to ascertain the commercial value of the fisheries and what amount of fish and other marine animals is taken for commercial purposes, and it also embraces a study of the fishing grounds, the fishermen, the apparatus, vessels, and boats.

Q. You say "and other marine animals." Do you include seals?—A. Seals and sea-otters, mollusks, including oysters and clams, and crustaceans, such as crabs, lobsters, etc.—anything that comes from the sea and is considered a product of the sea is taken cognizance of, even to the utilization of the sea-weed for fertilizing and other purposes, the capture of whales and other cetaceans.

Q. I understand you that within two years the commission has spent a good deal of time on this subject?—A. We have made, as I have stated, a complete investigation of the coast and river fisheries from San Diego to Puget Sound.

Q. You say "river fisheries." Have you done anything with any other river besides the Columbia?—A. Yes, sir.

Q. Any other river in the State of Washington besides the Columbia?—A. We have investigated the salmon fishery in the State of Washington.

Q. Have you investigated the upper Columbia?—A. We have gone as high as any important salmon fisheries, up to Celilo.

Q. You have only gone as high as Celilo?—A. Yes, sir.

Q. Here (indicating on map) is the Snake River; that comes in here (indicating). It is 3,000 miles long and it is a branch of the Columbia. The Columbia River is one of the largest rivers in the world.

By the CHAIRMAN:

Q. Yes, sir. There are no commercial fisheries, no establishments where fish are put up and shipped on the upper part of the river?—A. Not as I understand it.

By Senator SQUIRE:

Q. Have you done anything with such rivers which flow into Puget Sound as the Skagit River. That is a large river; not as large as the Columbia, but it is a large river emptying into Puget Sound and navigable fifty miles from its mouth.—A. We have not attempted to investigate those small rivers where they have no commercial fisheries.

Q. There are various canneries at different places about the sound; but there is not such a large business done as there is on the Columbia River?—A. All the canneries on Puget Sound, all the fishing grounds, and pounds, and things of that kind are located on the map.

Q. In regard to propagation, state whether it would not be practicable to have a man stationed, for instance, on Puget Sound or on the northwest waters of the United States or vicinity, to superintend the development of fishing industries there?—A. The Commissioner could doubtless best inform you as to the feasibility or desirability of having a man stationed at Puget Sound in the interest of the fisheries so far as relates to fish cultural operations or the propagation of fish. In the development of the work of the Division of Fisheries ———

Q. By that you mean the commercial fisheries?—A. Yes, sir; which embraces a collection of statistics and a study of all the questions relating to the commercial phases of the fisheries, it has been my desire to have agents at the more important fishing centers throughout the country, and I consider that Puget Sound is a locality that is especially desirable to study.

Q. In that connection?—A. In that connection.

Q. In connection with the commercial branch of the business?—A. That has been stated. The reason why we have not heretofore carried out this phase of the work more fully than has been done is the lack of appropriations.

Q. Would it not be proper to allot some share of such appropriations as you do have?—A. If we did that and established agencies at the more important centers of fishing we would have nothing left to carry on the regular investigations and prepare the reports after the statistics had been collected.

Q. How large a sum do you require to enable you to do that at the more important places? I mean this branch that you have now under your charge?—A. I think \$5,000 additional would enable us to do it. If it is practicable I desire to personally visit the Pacific coast and make a reconnaissance of the fisheries in that region at an early day. I have had this in mind during the past three years and in the spring of 1888 was prepared to go there when other duties prevented, and last summer was as far as Denver when I was recalled by the Super.

intendent of the Census who desired to consult me regarding the obtaining of the fishery census.

Q. How soon do you think you might be able to go?—A. I can not definitely determine how soon I may be able to go. The present investigation of the Fish Commission has very much interfered with my work and has made it impracticable for me to do things that I had planned to do this summer.

Q. There is another thought that has occurred to me. Have you ever, in this commercial branch of the subject, made an estimate of the total amount of fish consumption in the United States, so as to be able to show how valuable fish food is to us as a people, relatively to other articles of consumption?—A. I have not made such an estimate for the simple reason that since I have been in charge of this work there has not been time to compile all the statistics bearing upon the subject, nor has it been yet feasible to investigate the river fisheries of the country to the fullest extent.

Q. You have never been able to come to any approximate estimate as to the relative consumption of fish, for instance, as compared with meats?—A. Such an estimate could be prepared as an approximation. We should have to take into consideration there the importations of fish products into the United States.

Q. Have you ever yet arrived at any approximation about what is the importation of fish into the United States?—A. That is a matter of record in the Treasury Department.

Q. Do you take cognizance of that; do you furnish them material?—A. No, sir; that comes through the custom-house.

Q. And you never made any examination of those things?—A. No, sir; it is not necessary, because all the importations are matters of official record in the custom-houses and we get the returns from the Treasury Department and use them as we have occasion. The same obtains regarding the exportation of fish. That is a matter of record in the Treasury Department.

Q. Do you know whether or not our exports are equal to our imports?—A. I could not say definitely without figures. I will say, however, if you desire to know it—

Q. I do not care to go into the detail. It is the interest I take and I think that the public would take. You have presented us here a very elaborate statement, which is undoubtedly valuable as to the ground that you work upon, and in connection with this I asked you questions in regard to the value of your work?—A. Those statements of the quantities and values and number of men and all other statements relating to statistics appear in our reports, and it would be impossible for me, I presume it would be practically impossible for any one else, to carry all the data in his head.

At 12 o'clock m. the subcommittee adjourned until Friday, July 25, 1890, at 10 o'clock a. m.

WASHINGTON, D. C., *July 25, 1890.*

The subcommittee met at 10 o'clock a. m., pursuant to adjournment. Present, Senators STOCKBRIDGE (chairman) and BLODGETT.

TESTIMONY OF RICHARD RATHBUN—Recalled.

RICHARD RATHBUN, being recalled, testified as follows:

The WITNESS. I have some material here which I want to present, by request of the Commissioner, to show the purpose and the workings of my department of the Commission, it being one of the departments which has been criticised for the work it has presumed to do since Professor Baird's death.

In order to be concise I have reduced the matter to writing. I have a statement to make, which is of a general character, and which I should like to make orally, if I may. The rest is in the nature of more technical discussions, as brief as possible; and I would like simply to run them over with maps I have here, showing the extent and character of the work.

By direction of Commissioner McDonald I have had the honor to prepare for your consideration a brief account of the operations of the department under my charge during the past two years, together with a statement of the expenditures connected with the same. Considering, however, that the newspaper charges serving as the bases for the investigation now in progress contain severe criticisms upon the assumed functions and the administration of my department, coupled with gross misrepresentations of the actual condition of affairs, I desire to preface the description of the work performed with certain explanations going to justify the position taken by the Commissioner in regard to the treatment of fishery matters from a scientific stand-point. Should his position be the correct one, it remains for the committee to decide, after an examination of the papers laid before it, whether the work has faithfully been carried on, or whether the contrary is true.

The three divisions (aside from general administration) which represent the present organization of the Commission, are based upon the different character of work involved in its operations, and not upon the scope of the greater problems before it. That is to say, all of the divisions may be called upon to take action with regard to each general problem, showing their close inter-relations and also the difficulty of imposing fixed limits within which to discuss the special functions of each. My preliminary remarks may, therefore, overlap to some extent the provinces of the practical fisheries and of fish culture.

The department with which I have been charged has for its full title "Division of Scientific Inquiry Respecting Food-Fishes and the Fishing Grounds." For the sake of brevity, however, this has been shortened in common usage to the "Division of Scientific Inquiry," its object being the application of scientific methods of research to fishery problems.

HISTORICAL NOTICE.

The Fish Commission was established by act of Congress in February, 1871, for the express purpose of investigating the cause of decrease among food-fishes chiefly on the New England coast, and of determining remedial measures in respect to the same. The following year it

was further charged with the propagation of fishes as a partial means of restoring depleted grounds, and later its scope was enlarged to include the methods and statistics of the fisheries, having reference in the beginning mainly to our relations with the neighboring British Provinces. The necessity for the first inquiry was urged upon Congress by Professor Baird and other prominent individuals, whose intimate acquaintance with the subject entitled them to the fullest recognition. The plan was novel, having for its object the study of the question from a scientific point of view, instead of from the one then current both in Europe and in America, by interrogation of the fishermen. The results proved satisfactory and for two decades they have passed the public scrutiny without adverse criticism. From this initial point the scope of scientific inquiry was gradually increased until, under Professor Baird, it finally covered what is essentially the present scheme of operations, and it is with reference more to the manner of carrying out this scheme than to its character, past and present, that I desire to call attention.

The writer's opportunities for judging of the scientific work began in the summer of 1874, when, as a volunteer, he was attached to the sea-coast party. He held the same relations in 1875, and since the spring of 1878 has been in the regular employ of the Commission, down to the time of Professor Baird's death having been practically second in charge of the dredging operations, which were chiefly conducted under the supervision of Professor Verrill.

During Professor Baird's administration the scientific investigations were mostly limited to the Eastern sea-coast, and had reference mainly to the New England region.

The regular field-work was chiefly carried on in the summer months, and during the first decade it was customary to select a new headquarters every year, in order to reach conveniently all parts of the New England coast. In 1881, however, a permanent station was established at Wood's Holl. During 1871 and 1872 the largest vessels regularly at Professor Baird's command were only sail-boats and steam-launches, but from 1873 to 1879 he was given the use of the naval tugs *Bluelight* and *Speedwell*. The Fish Commission steamer *Fish Hawk* was completed in 1880, the steamer *Albatross* in 1883, and the schooner *Grampus* in 1886. The *Albatross* has exclusively been employed in the work of scientific inquiry, and the *Fish Hawk* and the *Grampus*, when their services were not required for other purposes.

The scientific personnel, during the earlier years of the Commission, consisted entirely of volunteers, the temporary exploring parties being composed of well-known specialists and advanced students from several prominent colleges and museums of natural history. As the work grew in magnitude and importance, and the duties became more arduous the custom sprang up of paying these assistants small salaries, not sufficient to compensate them for their time, but large enough to cover their ordinary expenses. It also became necessary to employ regular assistants to care for the large collections that had accumulated, and to conduct the continuous researches in several branches, which were carried on throughout the entire year.

Professor Baird's connection with the Smithsonian Institution and the National Museum increased his facilities for advancing the Fish Commission work, and, as is well known, during his life, a close relationship existed between those three institutions which proved mutually beneficial to them all. At the hands of an unscrupulous person a co-partnership of this character might not have been judicious, but no one

who is acquainted with the facts can for a moment doubt the good and entirely proper purpose which it served. Three assistants of the Commission, of which the writer was one, were made curators in the Museum, a similar arrangement also existing in respect to the Department of Agriculture, the Geological Survey, and the Bureau of Ethnology, which together furnish some eight or nine curators. The departments of the Museum presided over by the first-mentioned curators corresponded with their duties in the Commission. The collections which they handled and studied were almost exclusively the results of Fish Commission work. Their salaries were paid by the latter, the expense incidental to the storage of collections, chiefly by the former, these collections being transferred formally to the Museum's keeping, in view of the superior accommodations furnished in the fire-proof building of the Smithsonian Institution. These curators, moreover, were far from being limited in their duties to the care and elaboration of collections. They took an active part in all the field researches and in the preparation of reports on economic subjects relative to the fisheries.

In addition to the persons specified above there were a number of other permanent assistants. Prof. A. E. Verrill was paid a nominal salary for the important work he did in connection with the natural history explorations and the study of marine forms. Prof. John A. Ryder was employed as embryologist, and Dr. J. H. Kidder as physicist and chemist, and there were always one or two naturalists attached to the steamer *Albatross*.

No organization was effected in the personnel of the Fish Commission during the life-time of Professor Baird, except in the offices of general administration and distribution. The form of government was essentially paternal. Professor Baird gave personal direction to nearly every detail of the service. The orders went from him directly to each assistant in charge of work. There were, properly speaking, no sub-chiefs, outside of the offices mentioned above, to share the great responsibilities and to help carry the heavy burden which bore with greater weight year by year upon the broad shoulders of that untiring man. It was undoubtedly the petty worriments of administration that caused his premature death.

In 1885 Professor Baird was persuaded to consider the proposition to organize his forces. A committee of Fish Commission employes was appointed by him, and they draughted a set of regulations which embodied essentially the same organization that now exists; but through influences that were brought to bear, they were not adopted until after his death. What would have been the effect of organization while he lived it is now impossible to conjecture. With several chiefs standing in a position to advise with him and competent to do so, feeling also the responsibility for the work intrusted to them, it is probable that results of a somewhat different character might have been accomplished, but the researches could not have been more conscientiously conducted, nor could they have had a better purpose in view.

As before explained, the Fish Commission work began in the interest of depleted fisheries, and during the first two or three years Professor Baird was chiefly occupied with that specific problem, applying to it all the methods of investigation at his command. Subsequently he states that some of his deductions had not been entirely verified, an act which is not surprising, considering the relatively scanty information he possessed. He became convinced that fishery matters first required of science a comprehensive knowledge of the biological and physical conditions of the sea over wide areas before positive and safe con-

clusions could be made. This was most imperative in respect to the distribution and habits of fishes, and the relations of different species to their environment, to their associates, and to the lower forms of life constituting their food.

Thenceforth greatest stress was laid upon the natural history work, both in shallow and in deep water, with the accompanying observations of temperature and density. Dredging operations were most actively carried on in the vicinity of Eastport and of Portland, Me., between Cape Ann, Mass., and the eastern part of Long Island Sound; on the continental slope south of Martha's Vineyard, and along the outer edge of that slope, in deep water, from George's Bank to Cape Hatteras. A number of stations were occupied in the Gulf of Maine. The steamer *Albatross* made two trips across the great off-shore banks as far as the eastern edge of the Grand Bank, and cruises were undertaken to the Gulf of Mexico, the Caribbean Sea, and the Bahama Islands, chiefly for the benefit of the Hydrographic Office and at its expense. One of the principal duties of the *Albatross* was the study of the mackerel and menhaden grounds, but in that connection she was principally engaged in tracing the movements of the schools of fish, in interrogating the fishermen, and in visiting the factories. No special plans were matured for determining the characteristics of the grounds and the laws which regulate the varying abundance of fish. The temperatures were not observed with sufficient system and regularity to furnish data for a single continuous profile across the regions which those species traverse.

A very large amount of seining and of collecting by other methods was carried on in the neighborhood of the regular shore stations and in other localities along both the Atlantic and the Pacific coasts. Fishing methods were also employed on board the steamers, and assistance was received from the fishermen and from other bureaus of the Government. The results of all this work are of great value, and many reports upon it have appeared in the publications of the Fish Commission and of the National Museum. The large quarto volumes recently issued by the Fish Commission give practically an epitome of the benefits derived so far as they relate to the economic species down to about 1882.

The collections that accumulated have been stored in two places, the National Museum at Washington and the Peabody Museum at Yale College, Prof. A. E. Verrill, of New Haven, Conn., having had charge of the study of the marine invertebrates from north of Cape Hatteras.

In his report for 1883 Professor Baird remarks concerning the ocean fishing-grounds: "There has never been any formal investigation on this subject, and the banks that are known have been brought to light purely by accident."

It had evidently been his intention to take up this important subject, but for some reason it was never done. However, he succeeded in laying a good foundation for those who were to follow, and the broad surveys which he directed will serve as a basis for all future work. Moreover, many valuable discoveries were made in the way of fishery resources and other matters connected with the sea, the discussion of which would needlessly prolong these remarks.

Little attention was paid during the latter part of Professor Baird's life to the systematic determination of the causes of decrease among food fishes, but he was especially active in measures for replenishing the fisheries by means of artificial propagation, in relation to which many important monographs were prepared on the development and life history of economic species. Substantial progress was also made in the

investigations undertaken for the purpose of devising methods for the propagation of oysters on a commercial basis. The physical and natural history features of the large river systems were but partially understood, however, and there were many uncertainties regarding the stocking of new regions.

THE ADMINISTRATION OF COMMISSIONER M'DONALD.

In the interval of six or seven months between the death of Professor Baird and the appointment of Mr. McDonald, the commissionership was held by Prof. G. Brown Goode, assistant secretary of the Smithsonian Institution, who adopted, in its main features, the organization which exists to day.

As soon as Mr. McDonald entered upon his new duties, the purpose and functions of the Division of Scientific Inquiry were fully discussed, and advice was obtained from prominent scientific men, as well as from the fish commissioners of several States. He determined to abandon for the present the general oceanic problems, and to concentrate his efforts upon more specific ones, which promised immediate benefits to the fishermen and to fish culture. He found that the off-shore fishing grounds in the Gulf of Maine had never been examined by the Fish Commission, except in a very general way, while nearly all the marine surveys south of Block Island and as far as Florida had been confined to the outer steep edge of the continental plateau, outside of the ordinary range of fishing grounds. Scarcely anything had been done in the Gulf of Mexico, and the Pacific coast had not been touched upon beyond the study of its shore fishes.

The *Albatross* was then on her way to San Francisco. It was decided that she should first be assigned to develop the cod and halibut banks on the coasts of Alaska and Washington, which were then attracting particular attention and promised to afford the most important fisheries in the North Pacific Ocean. Later she would continue her work southward along the coasts of Oregon and California to San Diego. Her operations were to be confined to the continental border, where alone it was expected that fishing grounds could be found. The surveys were to be conducted with great care and thoroughness in order to determine the precise locations of all spots suited to fishing and their chief characteristics and resources. After the completion of the first general survey special fisheries will be investigated, and if the policy of the Commissioner is faithfully carried out, a few years will be sufficient to determine the fishery resources of that coast to the full extent that will be demanded by the western markets for a considerable period of time.

The *Fish Hawk*, which has generally served as a tender to the Wood's Holl laboratory during the summer months, was to be withdrawn from that service, and, so far as the funds would permit, take up the study of the oyster grounds of southern New England and New York, with respect to certain problems in which the oystermen are deeply interested, such as the destruction of oysters by star-fishes, and the failure during some seasons to obtain a set of spat.

The *Grampus*, when not required for other purposes, was to be assigned to the specific duty of determining, by precise methods, the actual characteristics of the off-shore surface fishing areas, the conditions regulating the migrations of pelagic fishes, like the mackerel and menhaden, and the possibility of anticipating their movements by surface or atmospheric indications. She was also to be available for the exploration

of bottom fishing grounds, in accordance with the methods followed by the *Albatross*.

Arrangements were made with Dr. David S. Jordan, the well-known ichthyologist, to report upon the fishes of the several river basins of the country and upon the physical characteristics of those basins, in the interests of existing fisheries and of fish culture. Before that could be done with satisfaction, however, it was necessary to conduct investigations in many regions the conditions of which had not been studied, and that work has been going on during the past two years.

The transfer of the *Albatross* to the Pacific coast made it impossible to continue at Wood's Holl for the present the work in systematic natural history which had been going on for so many years, and it was arranged to limit the investigations at that place to special studies upon the embryology and life history of useful fishes, for the benefit of fish culture, legislation, and fishery methods. The facilities of the laboratory were still to be granted to specialists in biology as during the lifetime of Professor Baird, where the same did not involve any additional expense to the Government.

At Washington the Fish Commission interests were entirely severed from those of the National Museum and the Smithsonian Institution, and a special laboratory has been established in its own building. After collections have been studied and reported upon, a type series from the same is deposited in the National Museum in accordance with law. The duplicates, however, are made up into sets and distributed directly by the Fish Commission, upon the recommendations of members of Congress, to institutions of learning throughout the country.

The creation of a Division of Scientific Inquiry made it necessary to establish an office in which the clerical work incidental to its administration could be performed. But, including the wages of the clerical force, the salaries paid to-day in the interests of scientific inquiry, together with the pay of assistants on board of vessels, are very much less than they were three and four years ago.

Summarizing the principal changes and advances made by Commissioner McDonald in respect to scientific inquiry, we find them to have been as follows:

The organization of the personnel upon the basis established by Professor Goode, which permits of the methodical direction of the work.

The severance of direct relations with the National Museum, insuring the conduct of the work in natural history in the interests solely of the Fish Commission.

The study of undeveloped fishery resources both on the sea-coasts and in interior waters, and the publication of reports upon the same, for the information of the fishermen.

The study of the biological and physical characteristics of the sea-coasts, lakes, and rivers, as a basis for the propagation and dissemination of useful fishes.

The investigation of the mackerel and menhaden grounds by precise methods, to determine if surface or atmospheric conditions readily observed by the fishermen are influential in regulating the movements of pelagic species, and may, therefore, be utilized in predicting their absence, their presence, or their abundance.

The return to methods first inaugurated by Professor Baird for determining the cause of decrease among food fishes and the remedies therefor, by investigations carried on for that specific purpose.

I venture to offer the following papers in explanation and confirmation of the foregoing statements, namely: An account of the purpose

and functions of the Division of Scientific Inquiry; Summary of the work accomplished between February, 1888, and July, 1890, with several maps showing the extent of the same; Summary of expenditures on account of scientific inquiry during the last four fiscal years; and, Copies of instructions for the guidance of field parties.

With respect to the first-mentioned paper, it should be explained that the scheme which it presents is the same that was determined upon at the beginning of Mr. McDonald's administration, and that has been followed in planning operations for the past two years. It covers, briefly, the Commissioner's views respecting the obligations of science to fishery matters, based upon the assumption that the purpose of Congress in establishing this Commission was to provide for the continued prosperity and improvement of the fishery industries, as much for the present time as for the future. That the work has not yet been extended into all the branches there proposed is frankly acknowledged, but that matter has necessarily to be regulated by the means at his disposal. The main points to be determined are: Has he directed the scientific work in the proper channels, and has the same been faithfully and economically conducted?

PURPOSE AND FUNCTIONS OF THE DIVISION OF SCIENTIFIC INQUIRY.

THE FISHING GROUNDS.

First in sequence may be placed the investigation of existing fishing grounds, whether those grounds are known to the fishermen at present or still await discovery. The purpose of this inquiry is the development of natural fishery resources; the supplying of information to the fishermen as to where their work may be carried on with most profit.

The principal fishing grounds are on the sea-coast, but important fisheries exist in all of our larger lakes and great river systems. Up to within a very short period the discovery of fishing grounds has been chiefly accidental or incidental, not due to organized and well-directed efforts, and their resources have been ascertained only through their gradual development. Such has been the history of the great ocean fisheries which are mainly tributary to New England, and having been resorted to long before the settlement of the adjacent coast, they are now better known than those of any other section of the North American continent.

It was stated by Professor Baird in his annual report for 1883, that up to that time no formal investigations had been made of any of our fishing grounds. It was in that year that the steamer *Albatross* was completed, but an examination of the operations of that vessel down to the fall of 1887 shows that the systematic surveys which Professor Baird evidently contemplated had not yet been taken up, and scarcely any researches had been made inside of the 100-fathom line, either in the Gulf of Mexico or on the Atlantic coast south of New York. As to the Pacific coast, it was almost wholly unknown ground. That all of these regions contain important fisheries has been well substantiated, and the value of determining their resources has been urged for many years. It was, therefore, manifestly the duty of Commissioner McDonald to take immediate action in respect to this matter, which he did.

It was considered that substantially the following character of information was what was demanded by the fishermen: The location, outline, and extent of the grounds, with the character of the bottom and the depth of water upon them; the kinds of useful fishes which inhabit each of the grounds, their abundance, size, and utility; their breeding and feeding habits, upon which in some cases depends their quality as food in different seasons; their migratory habits, which explain the shifting of the species from one locality to another at different seasons; the permanence of the grounds, dependent upon the character and abundance of the food and upon certain physical conditions; the distance of the grounds from markets; the meteorological characteristics of the region in which the grounds are located, as determining the period and length of the fishing season, and the character of the fishing vessels to be employed; the kinds of bait best suited to each species of fish and the localities where supplies of bait may be obtained, etc.

The inquiries to be made in obtaining the above information fall under three general heads, as follows: Hydrography, physics, and biology. Hydrography, in its

limited sense, determines the topography of the grounds, the depths of water, etc. This is essentially the character of work chiefly performed by the Coast Survey and Hydrographic Office for the benefit of commerce, but the interests of the fisheries in this respect have pushed outward from the coast more rapidly than those of commerce, requiring that the Fish Commission vessels pay considerable attention to this character of surveying work. Where, however, the soundings have previously been made by another branch of service, they are never duplicated, and the soundings of the Fish Commission are immediately utilized by the Coast Survey and Hydrographic Office in the making and correcting of their charts.

Physical observations relate to the temperature and density of the water, to the character, direction, and force of currents, and to atmospheric conditions and other kindred subjects. These, taken in conjunction with the hydrography, determine the limits of the faunas, and therefore the distribution of fishes. They also regulate the migrations of fishes and the methods of the fishermen. These inquiries are of greatest importance in relation to the more actively migratory fishes, such as the mackerel and menhaden, and the anadromous species like the shad and salmon, but they are essential to the study of all fisheries whatsoever, from the oyster beds between tides to the greatest depths frequented by useful fishes, and for those located in river systems as well as those on the lakes and sea-coasts.

The biological researches relate directly to the products of the grounds. They determine the different economic species which inhabit each region, their abundance, the purposes for which they may be utilized, and the seasons during which they inhabit the grounds, while the character and amount of the lower animals indicate the permanence of the grounds, and in great measure the commercial fishes which may resort to them. The subject necessitates a close observance of the habits of useful fishes, by which the fisheries are largely regulated, and of the species of fishes and invertebrates associated with them, serving as their natural food, and indicating the best kinds of bait to be used in their capture.

The manner of presenting this information to the fishermen is by means of charts, descriptive matter, and tables. The charts should be prepared with the same care that is bestowed upon those of the Coast Survey and Hydrographic Office, enabling the fishermen to locate the grounds by the ordinary methods known to them. As a pattern of what can and is being done by the present administration in this branch of the service, reference should be made to the report upon the first investigations of the steamer *Albatross* in the North Pacific Ocean, forming Part I of the Fish Commission Bulletin for 1888. •

THE DECREASE OF FOOD-FISHES AND THE DETERIORATION OF FISHING-GROUNDS.

This subject, for the consideration of which the Fish Commission was specifically established in 1871, requires in part the same treatment as the previous one, but a much more thorough execution and a closer attention to details. In the first instance we were studying the grounds in what was assumed to be their normal condition. A decrease indicates that in some way the balance of life has been disturbed, and it then becomes necessary to determine what the changes have been, how they have been brought about, and what measures are required to restore the normal condition, putting those measures into execution if it is possible to do so.

Previous to the organization of the Fish Commission it was customary for all governments which investigated subjects of this character to rely for evidence upon the testimony of the fishermen, fish-dealers, and other interested persons, with the almost invariable result of reaching no beneficial conclusions. We owe entirely to Professor Baird the inauguration of the natural method which now prevails, not only in this country, but also to some extent abroad.

The decrease of useful fishes may be due to natural causes, or to injudicious practices on the part of man. The fact of a decrease is usually reported by the fishermen, but requires confirmation in many instances, and its extent is often difficult to determine on account of the incompleteness of the older records. The cause of decrease is sometimes evident on slight inspection, but is more often exceedingly obscure. The human agencies which have chiefly been instrumental in this respect are the many large appliances of capture which line the shores, dams built across the streams and preventing the ascent or descent of fishes, and the pollution of the waters by factory refuse, etc. The natural causes are many and less well defined, such as the destruction of the natural food supply, the ravages of predaceous fishes and other natural enemies, changes in temperature, and perhaps in density, poisoned waters, excess of sediment, unusual storms, accumulation of shore ice, diseases, etc.

The decline in the New England inshore fisheries and in the shad, salmon, and whitefish fisheries have chiefly been the result of human agencies, if not in all cases directly yet through the destruction of the food on which the fishes lived. The naturally poisoned waters of the Gulf of Mexico have produced much damage, and physical disturbances along the inner edge of the Gulf Stream caused the death of

several hundred thousand tons of fishes during the spring of 1882. The oyster grounds of southern New England are said to suffer to the extent of several hundred thousand dollars annually through the depredations of star-fishes alone, and other predaceous species are known to be equally destructive. Epidemics among-food fishes are common in the interior lakes, and sometimes result in their almost entire depletion.

Precise methods of investigation are therefore necessary, to determine the actual cause of decrease and to furnish the proper data for applying remedial measures. The character of these researches must vary with that of the fishing regions and in accordance with the several species involved. The remedies are effected in two general ways, namely, by legislation and by propagation. In case the damage has been caused by human agencies and has not been carried too far, a protection of the grounds, strictly enforced, may, in the course of time, restore the fisheries, but legislation, being too often ill-advised and loosely executed, has seldom produced the desired effects. Moreover, the General Government has refrained from passing fishery laws, except in a few cases, leaving that matter to the discretion of the States. Propagation has, however, given marked beneficial results and is the one method by which the Fish Commission has been able to improve the condition of many depleted fishing-grounds.

LEGISLATION AND FISHERY METHODS.

While legislation has generally been the outcome of exhausted fisheries, it may serve a better purpose in protecting grounds while they are still productive, as is now being done by the Government in respect to the Alaskan salmon rivers. Effective laws and judicious fishery methods, however, can only be based upon a more or less complete knowledge of the natural conditions peculiar to each fishing region, or to each class of fisheries, and especially of the distribution, life histories and habits of fishes, and the relations of the same to their environment. These subjects have been receiving constant attention, and many practical benefits have already been obtained

INTERNATIONAL RELATIONS.

Our relations with neighboring countries, which are very important in respect to fishery matters, demand from scientific inquiry a knowledge of the positions, extent and character of foreign fishing grounds, of the sources of the bait supply, and of other similar subjects, both for the benefit of the fishermen and for use in treaty making.

PROPAGATION, OR INCREASE AND DISSEMINATION OF FISHES.

The purpose of this branch of work is, first, the maintenance or increase of existing fisheries, and, second, the establishment of new fisheries. The first relates chiefly to depleted grounds; the second to grounds which have never been sufficiently productive.

The necessity for propagation has first to be established. This is determined by the general investigation of fishing and other water areas and the special inquiry respecting depleted grounds, both of which subjects have been outlined above. If the object is to restore a depleted ground with a species which is native to it, the only precaution to be undertaken is to ascertain that the physical and, to some extent, the biological characteristics of the region have not materially changed. That is to say, that the conditions of its environment will still be congenial to the species, and that it will find an abundance of food. If, on the other hand, we are transplanting species into new regions, it becomes necessary to study all the conditions of the latter with respect to its suitability for the forms in question, both physically and biologically. Are the temperature and the density of the water adapted to them? Does the coast or river afford the necessary facilities for their spawning? Is there an abundance of proper food for the young and adult? Is the region infested with predaceous species which may destroy the eggs and embryos? But these are only a sample of the questions that have to be considered in this connection.

Moreover, the actual operations of propagation, the collecting and hatching of the eggs and the rearing and distribution of the embryos, are entirely dependent for their success upon the close observance of natural laws. We must know the breeding habits of the species, the places to which it resorts in large numbers for spawning purposes and the time of year when that occurs, the character and number of the eggs, the manner in which they can be fecundated and incubated artificially, the length of the period of incubation, the development of the embryo in the egg and also after leaving the egg, the length of time it should be kept in captivity, the kind of food adapted to it in the beginning, the proper localities for planting the young where they are certain to find nourishment and freedom from their enemies.

The development of hatching and of fishway methods are also scientific problems requiring not only an appreciation of the subjects mentioned above, but also a thorough knowledge of hydraulics and mechanics.

SPECIAL INVESTIGATIONS.

Certain problems occasionally arise which do not belong under any of the previous headings, but which deserve mention, such as determining the cause of deterioration in fishery products, methods of preservation of fish for food and bait, the composition and relative value of different fishes for food and other purposes, etc.

SUMMARY OF THE WORK ACCOMPLISHED BETWEEN FEBRUARY, 1888, AND JULY, 1890, WITH MAPS SHOWING THE EXTENT OF THE SAME.

WORK OF THE STEAMER ALBATROSS IN THE PACIFIC OCEAN.

When Mr. McDonald became Commissioner the steamer *Albatross* was in the Straits of Magellan bound for San Francisco, under orders from his predecessor, Professor Goode. She arrived at the latter place May 14, 1888, and immediately began preparations for a cruise to the Alaskan coast in accordance with the plans elsewhere described. The necessity of awaiting the beginning of the next fiscal year detained her in port until July four, when she sailed northward. Unalashka was reached July 21, and the *Albatross* remained in Alaskan waters until August 28, then returning to the coasts of Washington and Oregon, where a month and a half were spent in exploration. The work was only abandoned when the weather became so severe as to threaten the safety of the vessel.

The steamer reached San Francisco October 21, and began arrangements to spend the winter season on the coast of southern California. This cruise began January 3 and terminated April 25. May 21 she again left San Francisco for the north, but was detained on the coasts of Washington and Southern Alaska until August 4, when she started for Bering Sea. An accident to her machinery caused her to return to port, and the remainder of the season was spent between Cape Flattery and Cape Mendocino, the cruise terminating October 14. Operations were next begun March 10, 1890, and continued until April 13, between Point Conception and Punta Arena. On May 4 the *Albatross* sailed for Bering Sea to begin the investigation of the cod grounds in that region.

The extent of the investigations by the steamer *Albatross* in the Pacific Ocean during the past two years is represented on the four maps herewith presented; and it is confidently asserted that the work thus exhibited is greater in amount and has been more thoroughly executed than any similar surveys by this or any foreign government in a much longer period of time.

On the Alaskan coast the investigations have been carried continuously along the southern side of the Aliaska Peninsula from the vicinity of Unalashka to Middleton Island, a distance of 800 miles, the inquiry reaching from the coast line to the abrupt edge of the submerged continental slope. The total area examined was about 23,400 square geographical miles. Five principal banks were developed, having an extent of 15,200 square miles. These grounds resemble in character the great off-shore fishing banks of the Atlantic coast and are relatively equal to them in productiveness. Previous to the surveys of the *Albatross* only fragmentary information existed as to their positions and extent, and they had been resorted to by only a few fishing vessels from San Francisco.

On the western coast of the United States investigations of the same character have been carried from the Straits of Fuca to the latitude of San Diego, with a gap only between Cape Mendocino and Punta Arena. Beginning at the north the survey covers the entire halibut region lying between Vancouver Island and Flattery Rocks, and thence extends southward to Cape Mendocino, a distance of 520 miles, with an average width of about 30 miles. Within this width are comprised all the areas on this part of the coast which are suited to fishing.

From Punta Arena, just north of San Francisco, the work has been continued without intermission to the southern boundary of California, a distance of 550 miles. The width of the area examined (and of the continental slope) averages only about 16 miles north of Point Conception, but south of that place it broadens out to include the Santa Barbara Islands and Cortez and Tanner Banks.

The total area surveyed between Vancouver Island and San Diego is over 32,000 square miles, which added to the Alaskan grounds makes an extent of about 56,000 square miles representing the work of the steamer *Albatross* during two years.

The character of the surveys made by the *Albatross* may briefly be described as follows:

(1) The contour of the bottom is ascertained by hydrographic methods, in order to determine the location, outline and character of the regions or banks suited to fishing.

(2) The dredge and beam trawl are employed to determine the richness of the bottom in different places, or more properly speaking the feeding grounds to which fishes may resort.

(3) Fishing appliances are used to ascertain the actual presence of fishes, their kinds, abundance, and suitability for market.

This work has been conducted with the object of obtaining direct practical results, and those who are acquainted with its character can not but notice a marked difference in this respect from most of the explorations of the *Albatross* on the eastern coast.

Reports of the hydrographic, dredging, and fishing branches of the inquiry, covering the surveys to May 1, are already in hand and prepared for printing. That for 1888 has been published within a few weeks. The careful study of the fishes and lower animals requires considerable time, and their elaboration will throw much additional light on the character and value of the grounds, but the reports above referred to will give the fishermen of the Pacific coast a fair knowledge of their ocean fishing grounds, of which no surveys had previously been made.

Between February 26 and April 14 the steamer *Albatross* visited the Gulf of California, chiefly for the following purposes:

(1) To determine the physical characteristics of the Gulf with reference to the Colorado River, in which shad were planted a number of years ago.

(2) To study the conditions under which the Mexican oyster grows, with a view to its introduction on the coast of California.

(3) To ascertain the relations and intergradations between the northern and southern faunas, which must, to a great extent, determine the expediency of bringing oysters and other Mexican marine products into more northern waters.

The objects of the cruise were accomplished satisfactorily and a run was made to the Revillagigedo Islands, in order to make out their hydrographic relations to the American coast, such a digression being justified by our indebtedness to the Navy Department.

The table herewith appended has been prepared to show that there has been no relaxing in the work of the *Albatross* since the beginning of Mr. McDonald's administration. The record for 1889-'90 is incomplete, as the fiscal year has not yet ended; but that for 1888-'89 shows thirty-four days more service than for any previous year, a greatly increased number of soundings, and much more than the average number of dredgings. The fishing records have not been tabulated, as this branch of work is for the most part peculiar to the surveys of the past two years.

The following letter from Captain Tanner, commanding the *Albatross*, also shows that he considers that the steamer has been doing her full share of work:

U. S. COMMISSION OF FISH AND FISHERIES,
STEAMER ALBATROSS,
San Francisco, Cal., April 27, 1889.

M. McDONALD, Commissioner:

DEAR SIR: Your letter, No. 16, of April 16, is received. In reply, I beg leave to say that I will make necessary arrangements for work in the southern part of Bering Sea and Alaskan peninsula.

The work on the coasts of Washington and Oregon is incidental, and can be extended or restricted as you prefer.

In counting the time necessary for refitting you should bear in mind that this vessel is doing double duty, and if she is to continue it we must take ample time to put everything in order before sailing, particularly when bound for the remote regions of Alaska.

The summer's cruise in that region is usually considered sufficient for the year. The *Thetis*, *Bear*, *Rush*, *Patterson*, and *McArthur*, have spent the time since their arrival last fall in preparing for the next summer's cruise.

It is true that June is a good month in the Aleutian Islands, but to have been on the grounds at that date would have left no time for the Gulf trip.

I note what you say with reference to the Senate Committee.

With reference to coal. We can buy what we require from the Alaska Commercial Company at less cost than we can ship it, and the appropriation of the current year can be made available, if you will simply inform me of the amount you wish to apply to that purpose. I am glad to learn that the Alaskan chart is to be retained at a useful size. It is a great pity it could not have been out in time for the vessels going north this season.

I note what you say about the small boilers, glassware, etc. I wish the former were here now, for the launch gave out in San Diego, and will be of no further service until the new boiler is in.

As far as my own report of the recent cruise is concerned it will probably be ready before we start on the Alaskan trip, but I doubt your getting any from Professor Gilbert or Mr. Alexander, as their time will be pretty fully occupied with their trip. Professor Gilbert has charge of general investigations, including the oyster question, and reports on those matters must necessarily come from him. I suggested on several occasions, that he write from time to time informing you of his work, as I do of the movements of the ship. He sent one letter early in the cruise, and that ended it as far as I know.

I agree with you that the results of our work should be placed before the public as soon as possible, and have done what I could in that direction, with but indifferent success I fear.

Very respectfully,

Z. L. TANNER,
Lieut. Commander, U. S. Navy, Commanding.

Table showing the amount of work done by the steamer *Albatross* each year since she first went into commission.

	Days at sea.	Miles steamed.	Sound- ing sta- tions.	Dredg- ing sta- tions.
Calendar year 1883.....	121	11,228.2	116	116
Calendar year 1884.....	134	13,388	682	194
Calendar year 1885.....	130	13,705.4	625	318
Calendar year 1886.....	95	9,592.3	328	107
One and one half years January 1, 1887, to June 30, 1888.....	85	15,956.7	145	105
Fiscal year 1888-'89.....	168	17,124.6	965	237
Fiscal year 1889-'90 (to May 1, 1890).....			553	133

The record for 1889-'90 is necessarily incomplete. The *Albatross* sailed for Alaska the first part of May, and, unless prevented by accident, should accomplish fully as much work before the end of the fiscal year as is recorded for 1888-'89.

THE STEAMER FISH HAWK.

Oyster surveys.—This steamer, built more particularly for fish-hatching purposes, is assigned to scientific investigations when not otherwise employed. The most important inquiry in which she has been engaged during the past two years has been the study of certain problems relating to the oyster-beds of Rhode Island and Long Island Sound. It is well known that the oyster-beds in this region are subject to the attacks of star-fishes which are said to damage them to the extent of several hundred thousand dollars every year. The members of Congress from Connecticut have endeavored on several occasions to secure a special appropriation to defray the expenses of a survey of these grounds with the view of determining some measure for checking the ravages of these pests. Such an appropriation was never made, but Colonel McDonald realizing the commercial importance of the subject, decided to detach the steamer *Fish Hawk* from the Wood's Holl Station, to which she had generally served as a tender during the summer, and to assign her to the work. This was not possible until the latter part of the summer of 1888, when the *Fish Hawk* was sent to Providence River, and made a thorough survey of the oyster grounds from the mouth of the river to the most northern part of their extent. From Providence River the steamer went to the New Haven region and made a brief reconnaissance.

The following summer (1889) operations were commenced much earlier and extended through the entire region in the northern part of the sound from South Norwalk to New Haven, the work being conducted with great thoroughness over a large part of that area. As the inquiry progressed new problems were suggested by the condition of the beds, and it finally became evident that the investigations would have to be conducted on a much more comprehensive basis if positive and beneficial results were to be obtained. The physical characteristics of Long Island Sound had never been studied. It was not known whether there was a constant interchange of water between the sound and the ocean without, or whether the water became more or less stagnated and contaminated from the numerous dumping grounds and the sewage of the cities. Upon a knowledge of these facts, the importance of which was strongly emphasized in some quarters, might depend the future welfare of the oyster fisheries of Long Island Sound.

The *Fish Hawk* began this season's work about two weeks ago. Through the co-operation of the Coast Survey the means have been supplied to determine the circula-

tion of water through the sound and a chemist has been employed to ascertain the effects of the dumpings and sewage upon the purity of the water. As soon as that inquiry is well under way it is proposed to continue the careful survey of the bottom in each oyster district.

No survey of oyster territory upon so thorough and comprehensive a scale has hitherto been attempted either in this country or in Europe, and the results, whatever they may be, will have some application to all the oyster grounds along the American coast. Reports have been prepared upon the work accomplished up to the present time, but not being conclusive with respect to the principal points in question they have been regarded as in the nature of reports of progress, not warranting publication in detail. The accompanying maps show the extent of the work during the past two years.

Florida Fisheries.—From February 2 to April 5, 1889, the *Fish Hawk* was on the western coast of Florida chiefly in the vicinity of Charlotte Harbor, in the interest of the propagation of several species of fish, chiefly the mullet and the sheep's-head. Observations were made upon the habits, spawning season, and the amount and character of the spawn of those forms which could be obtained, and a number of localities were visited with the view of determining their fitness as sites for hatching stations. The eggs of the sheep's-head and of the sea trout were successfully hatched.

THE SCHOONER GRAMPUS.

During the past two years the schooner *Grampus* was assigned to this division for two important surveys. The first was undertaken in the winter season of 1888-'89, the second during the following summer.

The red snapper grounds.—The *Grampus* arrived at Key West January 27, 1889, under instructions to make a detailed investigation of the red snapper and grouper grounds which occupy a large part of the continental plateau off the western coast of Florida. A hasty reconnaissance of this region had been made by the steamer *Albatross* several years before, but her results were only general in character. The area marked out for study by the *Grampus* was comprised between the depths of 15 and 50 fathoms, and extended northward from the region of the Tortugas Islands to Cape San Blas. The object of the expedition was to determine the presence and relative abundance of red snappers, groupers, and other economic fishes in different parts of the region, and to learn as much as possible respecting their habits and the characteristics of their feeding grounds. The growing importance of the Gulf fisheries made it expedient to obtain such information as this, which had previously been sought for chiefly on the northeastern coast.

The manner of conducting the inquiry was to run parallel lines of observing stations across the bank from east to west at intervals of ten miles, the dredging stations to be ten miles apart on these lines, and the fishing to be carried on continuously while the vessel was under way as well as hove to, this being the method usually followed in the red snapper fishery.

The extent of the work is exhibited on the accompanying map which forms part of the report of that season's investigation. Stormy weather, which prevailed during a large part of the time, greatly interfered with operations, but ten lines were run between the Tortugas Islands and the latitude of Charlotte Harbor. The area covered was 100 miles long with an average width of about 65 miles, or a total extent of about 6,500 square miles. The work was thoroughly done and is to be compared only with the recent surveys of the steamer *Albatross* on the Pacific coast.

In conjunction with this exploration, a careful investigation was made of the shore fishes of the coast from Biscayne Bay to Tampa Bay, by Dr. James A. Henshall, using the seine boat of the *Grampus*. The methods and statistics of the fisheries of this region were also taken into consideration by Dr. Henshall. The narrative of this cruise has been submitted; the scientific results are being elaborated by Dr. Henshall and Dr. Jordan, conjointly.

The mackerel grounds.—There has probably been no more perplexing question before the Fish Commission than the migrations of pelagic fishes, chief of which, from an economical stand-point, are the mackerel and menhaden. The subject was first taken up during the earlier years of the Commission, and was attacked with renewed vigor after the completion of the *Albatross* and the *Grampus* with their greatly improved methods of investigation. The manner in which the problem was treated, however, did not permit of satisfactory results, and the physical observations were so disconnected that no general law could be deduced respecting the characteristics of the area through which these fishes pass in their migrations up and down the coast. The physical conditions of the water have as direct a bearing upon the habits of fishes as do the ordinary meteorological conditions upon the welfare of plants, and it is just as essential that the observations respecting them should be methodical and comprehensive.

The present Commissioner therefore made arrangements in the spring of 1889 with Prof. William Libbey, jr., of the College of New Jersey, to undertake this investigation in accordance with the perfected plans. The schooner *Grampus* was assigned to this work, and spent about two months of the summer of 1889 in the mackerel region south of New England. The appliances made use of were the most perfect that could be had, but it is unnecessary to describe them here. The report of Professor Libbey respecting the first season's operations is completed and nearly ready for the printer. The map which accompanies the same, and which is herewith presented, shows the area covered and the positions of the observing stations. Ten parallel lines were run southward from the coast a distance of 130 to 140 miles at intervals of 10 minutes of longitude, between the longitude of Block Island and that of eastern Nantucket, and observations were secured at every 10 miles along these lines. These observations were carried down to a depth of 500 fathoms and related to temperature and density. The result of this careful and painstaking inquiry was the construction of eight vertical sections or profiles through the area in question, and reaching well into the region of the Gulf Stream. These profiles which are exhibited show the distribution of layers of water of equal temperature, and also of the currents, and make known a peculiar intrusion into the Gulf Stream of a part of the arctic current which flows southward along the continental border. It is safe to say that no region in the world of equal extent has been studied in such detail and with so much care. In fact the method pursued was entirely novel and promises important results when considered in relation to the migrations of mackerel and also of other species.

The value of the inquiry has been recognized by the superintendent of the Coast Survey, not only in respect to the fisheries but to commerce also, and arrangements have been made for joint operations during the coming season by the steamer *Blake* and the schooner *Grampus*, under the direction of Professor Libbey.

Two such vessels, fully equipped, will be able to cover a much wider area than was studied last year, especially as one of them is a steamer, not dependent upon favorable winds. With a thorough knowledge of the physical characteristics of the region as a basis, the biological side of the subject may be taken up with some chances of explaining the fluctuations in abundance of pelagic fishes, but without such a basis no amount of desultory work in sounding, dredging, surface fishing, and temperature observation can be productive of satisfactory results.

INQUIRY RESPECTING INTERIOR WATERS.

The investigation of the interior waters, lakes, and rivers during the past two years has chiefly been under the supervision of Dr. David S. Jordan, of the University of Indiana, who has also taken an active part in the field work connected with the same. The only researches of this character which did not come under his direction were the study of the salmon rivers of Alaska, of some of the upper tributaries of the Ohio River by Dr. James A. Henshall, and of the Hudson River by Mr. Fred. Mather. The last-mentioned person is an employé of the Commission who was detailed for the examination of the Hudson River with reference to the recent introduction of salmon. The Alaskan investigations were also carried on by a regularly organized party of Fish Commission employés, with the exception of one member, the engineer. Otherwise all of the inland work has been done by volunteers, although during the last season a nominal monthly salary of \$25 each was usually paid to cover incidental expenses, wear and tear of clothing, etc., items which could not be refunded by the Treasury Department. These salaries for 1889-'90 amounted to \$300. Dr. Jordan's parties have been made up of persons who have received the benefit of his careful training in ichthyology, some of them having attained considerable eminence in that branch of zoology. Each field party is placed in charge of a competent head, and operations generally continue from June to October or November.

The distribution of the work during the past two years is represented on the accompanying map. The colored markings indicate the positions of the fishing and observing stations with as much accuracy as was possible on a map of so small a scale. What they fail to show, however, without explanation, is the fact that while the work appears to cover only limited portions of each river, it has in reality served to make known their character and inhabitants over a much greater part of their extent.

Up to the present time the inquiries have had reference chiefly to fishes, but the study of aquatic invertebrates which serve them as food has not been neglected, and plans were perfected during the past winter to give greater scope to that branch of the work. The researches have been comprehensive and exhaustive for nearly all localities, and, except for a few minor surveys, reports are in hand covering all of the inland investigations. A few of these reports are already in print.

The work accomplished has been as follows:

Atlantic coast drainage.—The Hudson River was examined in 1888, in order to learn the results of salmon planting by the Fish Commission, and to determine, if salmon

eggs could be obtained there, what small streams were suited to the development of the young, and the number and extent of the natural obstructions to the ascent of salmon. The work covered the entire length of the Hudson River and several of its upper tributaries, but was carried on in most detail from Albany northward. It is perhaps needless to explain that the Hudson River has been made a salmon stream through the exertions of the Fish Commission, substantial proof of that fact having been furnished by the investigations of Mr. Mather.

Farther south the following rivers were studied by Dr. Jordan and his assistants: Shenandoah, upper and middle course; James, upper and lower course; Dismal Swamp; Chowan, upper course; Roanoke, upper course; Pamlico, middle course; Neuse, upper and middle courses; Cape Fear, upper course; Great Pedee, upper course; Santee, upper course; Savannah, lower course; Ogeechee and Satilla.

Gulf of Mexico drainage.—Perdido, upper and middle courses; Alabama, middle course; Tombigbee, upper course; Pascagoula, lower course; Lake Pontchartrain.

Mississippi River tributaries.—The Ohio River at many places in the State of Ohio, and the following tributaries of that river: Muskingum, Little Miami, Hocking, Raccoon, Brush, and White Oak, in Ohio; Kanawha (upper and lower courses) and Guyandotte, in West Virginia; Big and Little Sandy, Kinnikinnik and Tygert, in Kentucky; Wabash River and many of its tributaries, in Indiana; Tennessee, upper branches in the Alleghany Mountains, and middle course in northern Alabama.

The Cedar and other rivers in Iowa; the southern tributaries of the Osage and the upper and middle courses of the Gasconade in Missouri; many tributaries of the White River in Missouri and Arkansas; the Arkansas River in Colorado, Kansas, and Arkansas; the upper branches of the Ouichita River, in Arkansas; the upper branches of the Platte River, in Colorado, and the upper waters of the Yellowstone River, in the Yellowstone National Park.

Pacific coast drainage.—The upper waters of the Columbia River in the Yellowstone National Park.

Gulf of California drainage.—The Colorado River and its branches in Colorado, Utah and Arizona; the Gila River in Arizona.

Alaskan salmon rivers.—The following act of Congress was approved March 2, 1889:

"That the Commissioner of Fish and Fisheries is hereby empowered and directed to institute an investigation into the habits, abundance, and distribution of the salmon of Alaska, as well as the present conditions and methods of the fisheries, with a view of recommending to Congress such additional legislation as may be necessary to prevent the impairment or exhaustion of these valuable fisheries, and placing them under regular and permanent conditions of production."

No appropriation having been made to carry out the provisions of this act, the Commissioner divided the expenses of the investigation between the items of the regular appropriation covering the three divisions of work to which the inquiries related, namely, scientific inquiry, methods and statistics of the fisheries, and propagation. Dr. T. H. Bean, ichthyologist, was in charge, assisted by Livingston Stone, fish culturist, Franklin Booth, engineer, and R. E. Lewis, general assistant. Mr. Booth was the only member of the party not in the regular service of the Commission.

The principal centers for the salmon industry in Alaska are Kadiak and Afognak Islands, Cook's Inlet, and Bristol Bay. The season suitable for field work is too short and means of transportation too limited to permit of the examination of all of these localities by a single party during one year, and operations were therefore limited to the two first mentioned places.

The results of this investigation have been fully described in a report by Dr. Bean, which was transmitted to Congress on June 9, with recommendations by the Commissioner as to the additional legislation suggested by the special act of Congress.

TEMPERATURE INVESTIGATIONS.

Temperature observations are taken regularly by the vessels and at the stations of the Commission. As only a comparatively small field can be covered in this manner, arrangements were made by Professor Baird a number of years ago with the Light-House Service and the Signal Service to co-operate in the work. At present such observations are being taken at 33 light-stations and 19 signal stations. The latter service conducts its part of the work without expense to the Commission. As to the light-stations, the Commission furnishes the instruments and pays the cost of forwarding the same. The only salary paid in this branch is for an observer at Fort Washington, on the Potomac River.

LIST OF CHARTS SUBMITTED.

Three charts showing the operations of the steamer *Albatross* on the coasts of Alaska, Washington, Oregon, and California, 1888-1890.

One chart showing the operations of the schooner *Grampus* on the mackerel grounds in 1889, with several temperature profiles.

One chart showing the investigations of the schooner *Grampus* on the red-snapper and grouper grounds of the Gulf of Mexico, 1889.

One map showing the extent of the inquiry respecting interior waters, 1888-1890.

WOOD'S HOLL STATION.

During the early years of the Commission the sea-coast work was chiefly confined to the New England coast, and a new locality was generally selected each year as the headquarters for operations. In 1881 it became advisable to make a permanent sea-coast station, as explained in the reports of Professor Baird, and Wood's Holl was selected for that purpose. Buildings and wharves were erected, and all the field work on the northeastern coast centered at that place. The propagation of cod, lobsters, and other marine species was started there some four or five years ago, and this branch of fish culture has rapidly increased in importance and results up to the present time.

Summer after summer the *Fish Hawk* and the *Albatross* were engaged in dredging and surveying in the neighboring region, and bringing their rich collections of specimens to Wood's Holl. To properly care for, assort, and study this large mass of material a force of ten to twelve persons was required, and during each summer season the station was chiefly given up to this class of work, although more or less attention was paid to the local fishes and zoology generally. When, in 1887 and 1888, the steamer *Albatross* was transferred to the Pacific coast, and the *Fish Hawk* was assigned to the more practical problems relating to the oyster industry, it was natural that a change should be made in the character of the researches at Wood's Holl. The need of a large force of workers in systematic zoology at that place no longer existed, and attention was turned to other problems, such as the embryology and life history of fishes and of the lower forms of life which require to be considered in connection with the fisheries and with fish culture. There has been no cessation in the activity at that station, which, in fact, is now more continuously in operation than ever before, dealing with fish culture from October to July, and with scientific inquiry during the summer as well as at other seasons.

During the summer of 1889, Prof. John A. Ryder, the eminent biologist of the University of Pennsylvania, was in charge of the laboratory, with the following associates, only a few of whom were under pay from the Commission, each being engaged upon some special investigation, namely: Prof. W. K. Brooks, Dr. E. A. Andrews, S. Watase, C. F. Hodge, and T. H. Morgan, of Johns Hopkins University; Dr. H. H. Field, Dr. and Mrs. C. F. Eigenmann, W. McM. Woodworth, and G. H. Parker, of Harvard University; Prof. Miller, Dr. C. F. W. McClure, and J. Warne Phillips, of the University of New Jersey; Prof. S. F. Clarke, of Williams College; Prof. S. F. Trotter, of Swathmore College; Prof. H. N. Mateer, of Worcester University; Dr. William Patten, of the Lake Laboratory, Milwaukee; Prof. J. S. Kingsley, of the University of Indiana; W. S. Marshall, of the University of Pennsylvania; and Dr. T. H. Bean, of the Fish Commission.

These men represented nine important educational institutions. Some of them staid only a few weeks, while others remained during the entire season. They are given the facilities of the laboratory in accordance with the policy inaugurated by Professor Baird, and occasioned no expense to the Commission, except in the case of those who were regularly employed for some specific purpose. However, it may truly be said that the work of all had a bearing upon the problems before the commission, in some cases perhaps remote, but nevertheless destined some day to exert an influence upon fishery matters.

In May, 1889, Dr. Henry V. Wilson, a graduate of Johns Hopkins University, was appointed resident naturalist at the Wood's Holl Station and placed in charge of the laboratory. Experience had shown the expediency of having some one at this locality to carry on the study of the embryology and life history of useful fishes throughout the year, and Dr. Wilson has so far chiefly been engaged upon the sea bass, one of the most important species of that region. His associates during the summer of 1889 were Prof. W. K. Brooks and Dr. E. A. Andrews, of Johns Hopkins University; Prof. F. H. Herrick, of Adelbert College; Prof. Edwin Linton, of Washington and Jefferson College; Dr. C. F. Hodge, of Clark University; W. McM. Woodworth, E. R. Boyer, and C. B. Davenport, of Harvard University; M. J. Greenman, of the University of Pennsylvania; B. H. Waters and C. W. Stevens, of the College of New Jersey; S. Watase, T. H. Morgan, R. P. Bigelow, and J. I. Peck, of Johns Hopkins University; Professor Wright, of Oberlin College. This year eight institutions were represented.

Reports of the operations at the Wood's Holl laboratory during 1888 and 1889, giving an account of the work of each person, have been presented, and will be printed in the annual reports of the Fish Commission. It may be stated in brief, however,

that the researches carried on expressly for the Commission related mainly to the sea bass, scup, sturgeon, lobster, oyster, the star-fish as an enemy of the oyster, and the parasites of fishes.

THE WASHINGTON OFFICE AND LABORATORY, PREPARATION OF REPORTS, ETC.

The Assistant in charge of Scientific Inquiry has direct charge of the investigations made under the appropriation of \$15,000 allotted to this purpose, and also of the operations of the steamer *Albatross*, and those of the steamer *Fish Hawk* and schooner *Grampus* when assigned to this service.

His office is the office of administration for this division of the work of the Commission. Three clerks are employed. In addition to the routine duties in conducting the investigations all reports upon the scientific work are passed upon in this office, revised if necessary, and prepared for publication. The correspondence is very large.

The Washington laboratory is maintained for the storage and assorting of collections and to afford facilities for studying the same. These collections are retained here until they have served their purpose to the Commission, when a type series is deposited in the National Museum, in accordance with law, and the duplicates are distributed to institutions of learning, upon the recommendations of members of Congress. Prior to June 1, 1889, the office and laboratory of Scientific Inquiry were accommodated in the National Museum, but during the month mentioned they were transferred to the new quarters in the Armory building. This transfer necessitated the purchase of considerable furniture for fitting up the rooms, an expenditure which will not be duplicated in future years, unless called for by the enlargement of the present quarters.

The reports upon the results of the investigations of lakes and rivers, conducted under the direction of Dr. David S. Jordan, are prepared at the University of Indiana by Doctor Jordan, Professor Gilbert, and other assistants. The collections are held there as long as required for study, after which they are forwarded to Washington. No salaries are paid for this work, and the only expenditures are for freight charges, type-writing, and the manual work of sorting and preparing collections for shipment. The collections of fishes made by the steamer *Albatross* on the Pacific coast during the past two years have also chiefly been studied at the Indiana University.

Many persons are engaged in elaborating the results of the scientific work as volunteers. They are chiefly college professors located in different parts of the country, who are actuated in undertaking this service by their personal interest in the subjects assigned them. They receive no salaries, and the only expenses incurred are for freight charges on specimens.

LIST OF THE SCIENTIFIC COLLABORATORS OF THE U. S. FISH COMMISSION, 1889-'90.

(Engaged in the preparation of reports without compensation.)

Prof. ALEXANDER AGASSIZ, Director Museum of Comparative Zoology, Cambridge, Mass. Echini and stalked crinoids.

JAMES E. BENEDICT, Assistant Curator, U. S. National Museum, Washington. Higher crustaceans of the North Pacific Ocean.

Prof. W. K. BROOKS, Johns Hopkins University, Baltimore, Md. Stomatopod crustaceans, medusæ and salpæ; embryology and life history of star-fishes in relation to the destruction of oyster beds by star-fishes. (Also temporarily employed in field work in connection with the latter subject, from July 1 to September 24, as explained elsewhere).

WILLIAM H. DALL, Curator, National Museum, Washington. Gastropod, scaphopod and bivalve mollusks.

Prof. B. W. EVERMANN, State Normal School, Terre Haute, Ind. Fresh-water fishes. (Also temporarily employed in field work, July 16 to August 31, as explained elsewhere.)

Dr. W. G. FARLOW, Harvard University, Cambridge, Mass. Marine plants.

Prof. WALTER FAXON, Museum of Comparative Zoology, Cambridge, Mass. Fresh-water crayfishes.

J. WALTER FEWKES, Secretary Boston Society of Natural History, Boston, Mass. Hydroids.

Prof. S. A. FORBES, State Laboratory of Natural History, Champaign, Ill. The invertebrate animals serving as food for fishes in Lake Superior, Lake Michigan, and other smaller lakes; diseases of fishes.

Prof. CHARLES H. GILBERT, University of Indiana, Marine and fresh-water fishes. (Also employed as naturalist on the steamer *Albatross* from July 1 to September 15, and from April 27 to June 30, as explained elsewhere.)

- Prof. G. BROWN GOODE, Assistant Secretary, Smithsonian Institution, Washington, D. C. Deep-sea fishes.
- Dr. JAMES A. HENSHALL, Secretary, Cincinnati Society of Natural History, Cincinnati, Ohio. Florida fishes.
- Dr. C. F. HODGE, Clark University, Worcester, Mass. The biology of the oyster grounds of Long Island Sound and Providence River. (Also temporarily employed in field work on the same subject, steamer *Fish Hawk*, August 1 to September 30, as explained elsewhere.)
- Dr. DAVID S. JORDAN, President University of Indiana, Bloomington, Ind. Marine and fresh-water fishes. (Also temporarily employed in field work, July 16 to August 21, as explained elsewhere.)
- Prof. LESLIE A. LEE, Bowdoin College, Brunswick, Me. Foraminifera; brachyuran, isopod and phyllopod crustaceans.
- Prof. WILLIAM LIBBEY, jr., College of New Jersey, Princeton, N. J. The physical characteristics of the mackerel grounds. (Also temporarily employed in charge of field work on the same subject, schooner *Grampus*, July 1 to September 24, as explained elsewhere.)
- Prof. EDWIN LINTON, Washington and Jefferson College, Washington, Pa. Parasites and diseases of fishes. (Also temporarily employed in field work on the same subject, as elsewhere explained.)
- Prof. J. P. McMURRICH, Clark University, Worcester, Mass. Actinians.
- Prof. W. F. MAGIE, College of New Jersey, Princeton, N. J. Meteorological conditions of the mackerel grounds. (Also temporarily employed in field work on the same subject, July 20 to September 18, as elsewhere explained.)
- Prof. S. E. MEEK, Coe College, Cedar Rapids, Iowa. Fresh-water fishes. (Also temporarily employed in field work on the same subject, July 16 to August 31, as elsewhere explained.)
- Dr. JAMES I. PECK, graduate of Johns Hopkins University. Pteropod and heteropod mollusks. (Also temporarily employed at Wood's Holl, July 1 to September 24, in investigating habits of scup and sea bass, as elsewhere explained.)
- Prof. JOHN A. RYDER, University of Pennsylvania, Philadelphia, Pa. The embryology of the sturgeon.
- Prof. S. I. SMITH, Yale University, New Haven, Conn. The crustaceans of the Atlantic coast.
- Dr. R. E. C. STEARNS, Adjunct Curator, National Museum, Washington. Gastropod, scaphopod, and bivalve mollusks.
- F. W. TRUE, curator, National Museum, Washington. Cetaceans.
- Prof. A. E. VERRILL, Yale University, New Haven, Conn. The marine invertebrates of the Atlantic coast north of Cape Hatteras.
- Prof. E. B. WILSON, Bryn Mawr College, Pa. Pycnogonids.

(Engaged in the preparation of reports for which compensation has or will be paid.)

- Prof. W. O. ATWATER, Wesleyan University, Middletown, Conn. Monographic report upon the chemical composition and nutritive value of economic fishes and marine invertebrates. (Cost, \$1,000.)
- Prof. F. H. HERRICK, Adelbert College, Cleveland, Ohio. Monographic report upon the embryology and life history of the lobster, undertaken for the purpose of obtaining data for improving the methods of propagating the same. (Cost, \$500.)

LIST OF OFFICIAL REPORTS AND SPECIAL SCIENTIFIC PAPERS, 1888-'90.

Following is a list of completed reports upon the work accomplished in this division during the past two years, together with the titles of many special papers on scientific subjects based upon materials or resulting from the facilities furnished by the Fish Commission. The latter were prepared and published at no expense to the Commission, and are inserted in this connection as proofs of the assistance that has been rendered incidentally toward the advancement of scientific research in general. This part of the list is, moreover, very incomplete, only the records conveniently at hand having been used in its preparation. Official reports now in course of preparation would add several titles to the list.

- A. C. ADAMS and W. C. KENDALL. Report upon the investigation of the red-snapper and grouper fishing grounds off the western coast of Florida, by the schooner *Grampus*, during the early part of 1889. 96 MS. pages, 1 map.
- ALEXANDER AGASSIZ. Ueber einen neuen Tiefsee-Crinoiden aus der Familie der Apiocriniden. Neuen Jahrb. Miner. Geol. and Palaeon, 1890. Bd. I, 1 page.
- Voyage of steamer *Albatross*, Norfolk to San Francisco, 1887-'88.
- E. A. ANDREWS. Notes on the body-cavity liquid of *Sipunculus Gouldii*, Pourtales. Johns Hopkins University Circular, No. 80, 1890, p. 65.
- From studies made at the Wood's Holl Laboratory.

W. O. ATWATER. Monographic report upon the chemical composition and relative value of economic fishes and marine invertebrates for food and other purposes. 400 MS. pages, 33 plates.

This important monograph, begun some years ago by request of Professor Baird, has been completed during the current year.

TARLETON H. BEAN. Notes on the cruise of the *Grampus* on the southern mackerel grounds during the spring fishery of 1887. Bulletin U. S. Fish Commission, VII, pp. 241-258. (See under D. E. Collins.)

TARLETON H. BEAN. Notes on fishes collected at Cozumel, Yucatan, by the U. S. Fish Commission, with descriptions of new species. Bulletin U. S. Fish Commission, VIII, pp. 193-206, 3 plates.

Material obtained by the steamer *Albatross* in 1885.

TARLETON H. BEAN. Report on the salmon rivers of Alaska. 107 MS. pages, 8 charts, 44 plates.

Investigations conducted in accordance with an act of Congress approved March 2, 1889. Report transmitted to Congress June 9, 1890.

TARLETON H. BEAN. Report on the proposed introduction of the Jamaica mountain mullet into the United States. 43 MS. pages.

TARLETON H. BEAN. Description of a new cottoid fish from British Columbia. Proc. U. S. Nat. Mus., XII, pp. 641, 642, 1890.

Investigations of the steamer *Albatross* on the western coast of North America, 1888.

TARLETON H. BEAN. New fishes collected off the coast of Alaska and the adjacent regions southward. Proc. U. S. Nat. Mus., XIII, pp. 37-45, 1890.

Investigations of steamer *Albatross*, 1888.

TARLETON H. BEAN. Hybrids in Salmonidæ. Trans. Amer. Fisheries Soc., 18th. meeting, 1889, pp. 12-20.

ROBERT PAYNE BIGELOW. Notes on the physiology of *Caravella maxima* (Portuguese man-of-war). Johns Hopkins University Circular, No. 80, 1890, pp. 61, 62.

From studies made at the Wood's Holl Laboratory.

ROBERT PAYNE BIGELOW. The marginal sense organs in the Pelagidæ. Johns Hopkins University Circular, No. 80, 1890, pp. 65-67.

From studies made at the Wood's Holl Laboratory.

CHARLES H. BOLLMAN. A report upon the fishes of Kalamazoo, Calhoun, and Antrim Counties, Michigan, obtained in connection with the investigation of the Michigan fish commission, during the summer of 1888. 20 MS. pp. In course of publication in the Bulletin for 1888.

W. K. BROOKS. On the relationship between *Salpa* and *Pyrosoma*. Johns Hopkins University Circular, No. 80, 1890, p. 53.

From studies made at the Wood's Holl Laboratory.

D. E. COLLINS, T. H. BEAN, and RICHARD RATHBUN. Results of investigations by the schooner *Grampus* on the southern mackerel grounds in the spring of 1887. Bulletin U. S. Fish Commission, VII, pp. 217-267.

J. W. COLLINS and D. E. COLLINS. Report upon the operations of the U. S. Fish Commission schooner *Grampus*, from March 15, 1887, to June 30, 1888. 267 MS. pages, 16 plates, 1 chart.

Relates both to scientific inquiry and to the methods of the fisheries.

E. D. COPE. Report on the batrachians and reptiles collected in 1887-'88. Proceedings U. S. National Museum, XII, pp. 141-147, 1889.

Voyage of steamer *Albatross*, Norfolk to San Francisco, 1887-'88.

WILLIAM HEALEY DALL. Preliminary report on the collection of mollusca and brachiopoda obtained in 1887-'88. Proceedings U. S. Nat. Mus., XII, pp. 219-362, 1889.

Voyage of steamer *Albatross*, Norfolk to San Francisco, 1887-'88.

WILLIAM HEALEY DALL. A preliminary catalogue of the shell-bearing marine mollusks and brachiopods of the southeastern coast of the United States, with illustrations of many of the species. Bulletin U. S. Nat. Mus., No. 37, 1889, 221 pp., 74 plates.

Based largely upon the investigations of the U. S. Fish Commission, and of the U. S. Coast Survey.

FLETCHER B. DRESSLAR and BERT FESLER. A review of the mackerels (*Scombrinæ*) of America and Europe. Bulletin U. S. Fish Commission, VII, pp. 429-446, 11 plates.

C. H. and R. S. EIGENMANN. The fishes of Cortez Bank. Notes from the San Diego Biological Laboratory, 1889, 14 pp.

Private investigations made subsequent to and in consequence of the development of Cortez Bank by the Fish Commission steamer *Albatross* in 1889.

WALTER FAXON. Notes on North American cray-fishes—family *Astacidæ*. Proc. U. S. Nat. Mus., XII, pp. 619-634.

Includes an account of the cray-fishes collected by the Fish Commission field parties during 1888-'89.

- S. A. FORBES. On some Lake Superior Entomostraca. 26 MS. pages, 4 plates. In course of publication in Annual Report for 1888.
Relates to some of the lower forms of animals inhabiting Lake Superior and serving as food for young whitefish and other species.
- S. A. FORBES. Preliminary report upon the invertebrate animals inhabiting lakes Geneva and Mendota, Wisconsin, with an account of the fish epidemic in lake Mendota, in 1884. 33 MS. pages, 3 maps.
- CHARLES H. GILBERT. Notes on fishes from the lowlands of Georgia, with a description of a new species (*Opsopeodus bollmani*). 11 MS. pages. In course of publication in the bulletin for 1888. Investigations by C. H. Bollman and Bert Fesler, 1889.
- CHARLES H. GILBERT. Lists of fishes from the bend of the Tennessee, and from the Alabama and Escambia rivers, with notes and descriptions of three new species. 43 MS. pages, 2 figures.
Results of investigations in 1889.
- CHARLES H. GILBERT. Report upon certain investigations relative to the planting of oysters in southern California. 14 MS. pages, 3 maps, 1 plate.
Investigations of steamer *Albatross*, 1889.
- CHARLES H. GILBERT. Notes on the occurrence of *Gillichthys y-cauda* at San Diego, Cal. Proc. U. S. Nat. Mus. XII, p. 363, 1890.
- CHARLES H. GILBERT. A preliminary report on the fishes collected by the steamer *Albatross* on the Pacific Coast of North America during the year 1889, with descriptions of twelve new genera and ninety-two new species. Proc. U. S. Nat. Mus. XIII, pp. 49-126, 1890.
- G. BROWN GOODE and TARLETON H. BEAN. The deep-sea fishes of the North Atlantic Basin. 1500 MS. pages, 230 figures. To be published as a Bulletin of the National Museum.
- JAMES A. HENSHALL. Some observations on Ohio fishes. Jour. Cincin. Soc. Nat. Hist., Jan., 1890, pp. 114-125.
Results of field work in 1888 and 1889.
- F. H. HERRICK. The development of the American lobster: *Homarus americanus*. Johns Hopkins University Circular, No. 80, 1890, pp. 67, 68.
From studies made at the Wood's Holl Laboratory.
- C. F. HODGE. A study of the oyster beds of Long Island Sound with reference to the ravages of star-fishes. Johns Hopkins University Circular, No. 75, p. 102, 1889.
Investigations of steamer *Fish Hawk*.
- C. F. HODGE. Report of experiments made at Wood's Holl in 1889 upon lobster hatching and the feeding of young lobsters, 22 MS. pages.
- L. O. HOWARD. Annotated catalogue of the insects collected in 1887-'88. Proc. U. S. Nat. Mus. XII, pp. 185-216, 1889.
Voyage of steamer *Albatross*, Norfolk to San Francisco, 1887-'88.
- DAVID STARR JORDAN. Report of explorations made during 1888 in the Alleghany region of Virginia, North Carolina, and Tennessee, and in Western Indiana, with an account of the fishes found in each of the river basins of those regions. Bulletin U. S. Fish Commission, VIII, pp. 97-173, 3 plates.
- DAVID STARR JORDAN. Report of explorations in Colorado and Utah during the summer of 1889 with an account of the fishes found in each of the river basins examined. 82 MS. pages, 13 plates.
- DAVID STARR JORDAN. A reconnaissance of the streams and lakes of the Yellowstone National Park, Wyoming. 68 MS. pages, 26 plates, 1 map.
Investigations made in the autumn of 1889.
- DAVID STARR JORDAN. A review of the Labroid fishes of America and Europe. 209 MS. pages. In course of publication in the Annual Report for 1888.
- DAVID STARR JORDAN. Descriptions of fourteen species of fresh-water fishes collected by the U. S. Fish Commission in the summer of 1888. Proc. U. S. Nat. Mus., XI, pp. 351-362, 1 plate, 1888.
- DAVID STARR JORDAN. Catalogue of fishes collected at Port Castries, Sta. Lucia, by the steamer *Albatross*, November, 1887. Proc. U. S. Nat. Mus., XII, pp. 645-652, 1890.
Voyage of steamer *Albatross*, Norfolk to San Francisco, 1887-'88.
- DAVID STARR JORDAN. List of fishes obtained in the harbor of Bahia, Brazil, and in adjacent waters, during the voyage of the steamer *Albatross* from Norfolk to San Francisco. 41 MS. pages. To be published in the Proc. U. S. Nat. Mus.
- DAVID STARR JORDAN and CHARLES HARVEY BOLLMAN. Descriptions of new species of fishes collected at the Galapagos Islands and along the coast of the United States of Colombia, 1887-'88. Proc. U. S. Nat. Mus., XII, pp. 149-183, 1889.
Voyage of steamer *Albatross*, Norfolk to San Francisco, 1887-'88.
- DAVID STARR JORDAN and CARL H. EIGENMANN. A review of the genera and species of Serranidæ found in the waters of America and Europe. 443 MS. pages. In course of publication in the Bulletin for 1888.

DAVID STARR JORDAN and BARTON WARREN EVERMANN. Description of the yellow-finned trout of Twin Lakes, Colorado. Proc. U. S. Nat. Mus., XII, pp. 453-454, 1890.

New species of trout occurring at the Colorado Station of the Fish Commission.

DAVID STARR JORDAN and BARTON W. EVERMANN. Description of a new species of fish from the Tippecanoe River, Indiana. Proc. U. S. Nat. Mus., XIII, pp. 3, 4; 1 fig., 1890.

Investigations of 1888.

WILLIAM LIBBEY, Jr. Report upon the investigations of the schooner *Grampus* in 1889 in respect to the physical characteristics of the mackerel fishing grounds off the coast of southern New England. 198 MS. pages, 1 map, 31 diagrams, 6 plates.

Contains the following supplemental reports: On the atmospheric electricity of the region, by Prof. W. F. Magie; on the surface organisms collected, by Prof. W. K. Brooks.

WILLIAM LIBBEY, Jr. The cruise of the *Grampus*, Princeton College Bulletin, Vol. I, No. 4, 1889, pp. 100-103.

Brief account of the investigations on the mackerel grounds during the summer of 1889.

EDWIN LINTON. Notes on Entozoa of marine fishes of New England, with descriptions of new species. Part II. 448 MS. pp., 15 plates. In course of publication in the Annual Report for 1888.

The greater part of the material discussed in this paper was obtained in the Vineyard Sound region of Massachusetts by Professor Linton and other members of the Fish Commission during several years past.

EDWIN LINTON. Notes on Entozoa of marine fishes, with descriptions of new species. Part III. 59 MS. pages, 8 plates.

The remarks made under the previous title apply also to this one.

EDWIN LINTON. On two species of *Ligula* (larval *Dibothria*) infesting the trout and suckers in the Yellowstone National Park. MS. pages, 5 plates. In course of publication in the Bulletin for 1889.

Material collected by field party under Dr. David S. Jordan, October, 1889. These parasites are a source of great trouble, especially in respect to the trout, a large percentage of which they render worthless as food.

EDWIN LINTON. On the wart-like excrescences occurring on the short minnow, *Cyprinodon variegatus*, due to psorosperms. 14 MS. pages, 1 plate.

Studies made at the Wood's Holl Laboratory.

FREDERICK A. LUCAS. Catalogue of skeletons of birds collected at the Abrolhos Islands, Brazil, the Straits of Magellan, and the Galapagos Islands, in 1887-'88, Proc. U. S. Nat. Mus., XIII, pp. 127-130, 1890.

Voyage of steamer *Albatross*, Norfolk to San Francisco, 1887-'88.

FRED. MATHER. Report upon the results of salmon planting in the Hudson River, Bulletin U. S. Fish Commission, VII, pp. 409-424.

Based upon an investigation made in 1888.

SETH E. MEEK. Report of investigations during the summer of 1889, in the Ozark region of Missouri and Arkansas, with an account of the fishes found in each of the river basins of that region. 54 MS. pages, 2 figures.

T. H. MORGAN. Origin of the test cells of ascidians. Johns Hopkins University Circular No. 72, p. 63, 1889.

From studies made at the Wood's Holl laboratory.

T. H. MORGAN. A preliminary note on the embryology of the Pycnogonids. Johns Hopkins University Circular No. 80, 1890, pp. 59-61, 3 figures.

From studies made at the Wood's Holl laboratory.

WILLIAM PALMER. Fish-eating birds observed during the cruise of the schooner *Grampus* to the Gulf of St. Lawrence and Newfoundland, in 1887. Proc. U. S. Nat. Mus. XIII, 1890, 49 MS. pages.

JAMES I. PECK. Notes on the life history of the scup and sea bass in Vineyard Sound. 29 MS. pages.

Investigations made during the summer of 1887.

JAMES I. PECK. On the anatomy and histology of *Cymbuliopsis calceola*. Johns Hopkins University Circular No. 70, pp. 32, 33, 1889.

Based upon materials supplied by the schooner *Grampus*.

J. I. PECK. On the anatomy and histology of *Cymbuliopsis calceola*. Studies from the Biol. Lab. of Johns Hopkins Univ. IV, No. 6, pp. 335-353. plates XXXVI-XXXIX, 1890.

Based upon material supplied by the schooner *Grampus*.

ROBERT PLATT. Report upon the investigations made by the steamer *Fish Hawk* on the coast of Florida during the early part of 1889, relative to the spawning habits etc., of the mullet, sheepshead, sea trout, and other species.

ROBERT PLATT. Report upon the investigations made by the steamer *Fish Hawk* during the summer of 1889, relative to the oyster grounds of Long Island Sound. 35 MS. pages, 6 charts.

- RICHARD RATHBUN. Notice of the small surface organisms taken in the tow-nets, and of the contents of mackerel stomachs. (Cruise of schooner *Grampus*, spring of 1887). Bulletin U. S. Fish Commission, VII, pp. 259-267. (See under D. E. Collins.)
- [RICHARD RATHBUN.] Report upon the explorations of the fishing grounds of Alaska, Washington Territory, and Oregon, from July to October, 1888, by the U. S. Fish Commission steamer *Albatross*, Lieut. Commander Z. L. Tanner, U. S. Navy, commanding. Bulletin U. S. Fish Commission, VIII, pp. 1-92, 11 plates, 3 charts.
- RICHARD RATHBUN. The transplanting of lobsters to the Pacific coast of the United States. 75 MS. pages, 2 plates. In course of publication in the Bulletin for 1888.
- RICHARD RATHBUN. Ninety-seven charts showing the average temperature of the water by ten-day means at ninety-seven stations of the Light-House Board and Signal Service in different parts of the United States.
- ROBERT RIDGWAY. Birds collected on the Galapagos Islands in 1888. Proc. U. S. Nat. Mus. XII, pp. 101-128, 1889.
Voyage of steamer *Albatross*, Norfolk to San Francisco, 1887-'88.
- ROBERT RIDGWAY. Birds collected on the island of Sta. Lucia, West Indies, the Abrolhos Islands, Brazil, and at the Straits of Magellan, in 1887-'88. Proc. U. S. Nat. Mus., XII, pp. 129-139, 1889.
Voyage of steamer *Albatross*, Norfolk to San Francisco, 1887-'88.
- JOHN A. RYDER. The sturgeon and sturgeon industries of the eastern coast of the United States. 173 MS. pages, 23 plates.
Investigations made chiefly during 1888, with the view of devising means of propagating the sturgeon.
- JOHN A. RYDER. Report upon the scientific work carried on at the Wood's Holl laboratory of the U. S. Fish Commission during the summer of 1888. 31 MS. pages.
- JOHN A. RYDER. The lateral line organs and the hyaline tissues of the head of the shad.
Trans. Amer. Fisheries Soc., 18th meeting, 1889, pp. 20-22.
- WILLIAM P. SEAL. The Aquarium. A brief exposition of its principles and management. Bulletin U. S. Fish Commission, VII, pp. 274-282.
- WILLIAM P. SEAL. The keeping of Salmonidæ for purposes of exhibition. Bulletin U. S. Fish Commission, VII, pp. 283, 284, 1 figure.
- WILLIAM P. SEAL. An inquiry as to the proper methods for the care of living things held for popular amusement and instruction, or for purposes of biological research. Bulletin U. S. Fish Commission, VII, pp. 285-287, 2 plates.
- WILLIAM P. SEAL. Notes on the aquaria at the central station of the U. S. Fish Commission, Washington, D. C. 19 MS. pages, 3 figures.
- JAMES M. SMITH. Report upon the operations of the steamer *Fish Hawk* during the summer of 1888, relative to the oyster-starfish investigation in Providence River and Long Island Sound. 25 MS. pages, 4 charts.
- ROBERT E. C. STEARNS. Descriptions of new West American land, fresh-water and marine shells, with notes and comments. Proc. U. S. Nat. Mus. XIII, pp. 205-225, plates XV-XVII, 1890.
The marine shells were partly obtained during the voyage of the steamer *Albatross*, Norfolk to San Francisco, 1887-'88.
- Z. L. TANNER and others. Report on the work of the U. S. Fish Commission steamer *Albatross* from January 1, 1887, to June 30, 1888. 113 MS. pages 12 figures. In course of publication in the annual report for 1888.
Investigations on the Atlantic coast prior to November, 1887, and the voyage from Norfolk to San Francisco.
- Z. L. TANNER and others. Report on the work of the U. S. Fish Commission steamer *Albatross* from July 1, 1888 to June 30, 1889. 225 MS. pages
Investigations on the Alaskan coast and on the coasts of Washington, Oregon, and California.
- Z. L. TANNER and others. Report on the work of the U. S. Fish Commission steamer *Albatross* from July 1, 1889 to June 30, 1890. 108 MS. pages.
Investigations on the coasts of southern Alaska, Washington, Oregon, and California.
- CHARLES H. TOWNSEND. Birds from the coasts of western North America and adjacent islands, collected in 1888-'89, with descriptions of new species. Proc. U. S. Nat. Mus. XIII, pp. 131-142, 1890.
Scientific results of the explorations of the steamer *Albatross*.
- CHARLES H. TOWNSEND. Reptiles from Clarion and Socorro Islands, and the Gulf of California, with descriptions of new species. Proc. U. S. Nat. Mus. XIII, 1890. 3 MS. pages.
Scientific results of the explorations of the steamer *Albatross*.
- FREDERICK W. TRUE. Contributions to the natural history of the cetaceans. A review of the family Delphinidæ. Bull. U. S. Nat. Mus. No. 36, 1889, 190 pp., 47 plates, Based in part upon collections made by the U. S. Fish Commission.

- GEORGE VASEY. List of the plants collected in Alaska in 1888. Proc. U. S. Nat. Mus. XII, pp. 217-218, 1889.
Alaskan cruise of steamer *Albatross*.
- GEORGE VASEY and J. N. ROSE. Plants collected in 1889, at Socorro and Clarion Islands, Pacific Ocean. Proc. U. S. Nat. Mus. XIII, pp. 145-149, 1890.
Scientific results of the explorations of the steamer *Albatross*.
- S. WATASE. On a new phenomenon of cleavage in the ovum of the Cephalopod. Johns Hopkins University Circular No. 70, pp. 33, 34, 1 fig., 1889.
From studies made at the Wood's Holl laboratory.
- S. WATASE. On the structure and development of the eyes of the Limulus. Johns Hopkins University Circular No. 70, pp. 34-37, 2 figs., 1889.
From studies made at the Wood's Holl laboratory.
- S. WATASE. Karyokinesis and the cleavage of the ovum. Johns Hopkins University Circular No. 80, 1890, pp. 53-56, 2 figures.
From studies made at the Wood's Holl laboratory.
- S. WATASE. On the migration of the retinal area and its relation to the morphology of the simple ocelli and the compound eyes of Arthropods. Johns Hopkins University Circular No. 80, 1890, pp. 63-65.
Based in part upon studies at the Wood's Holl laboratory.
- S. WATASE. Observations on the development of Cephalopods: homology of the germ-layers. Studies from the biol. lab. of Johns Hopkins University IV, No. 4, pp. 163-192, plates XVI-XVII, 1888.
From studies made at the Wood's Holl laboratory.
- S. WATASE. On the morphology of the compound eyes of Arthropods. Studies from the biol. lab. of Johns Hopkins University IV, No. 6, pp. 287-334, plates XXIX-XXXV, 1890.
From studies made at the Wood's Holl laboratory.
- CHARLES A. WHITE. On certain Mesozoic fossils from the islands of St. Paul and St. Peters, in the Straits of Magellan. Proc. U. S. Nat. Mus. XIII, 1890, 4 MS. pages, 2 plates.
Voyage of steamer *Albatross*, Norfolk to San Francisco, 1887-'88.
- HENRY V. WILSON. Report upon the scientific work carried on at the Wood's Holl Laboratory of the U. S. Fish Commission during the summer of 1889. 21 MS. pages.
- HENRY V. WILSON. Monographic report upon the embryology and life history of the sea bass (nearly completed).
Investigations made at the Wood's Holl Laboratory.
- HENRY V. WILSON. On the development of the sea bass. Johns Hopkins University Circular No. 80, 1890, pp. 56-59, 3 figures.
Studies made at the Wood's Holl Laboratory.

SUMMARY OF EXPENDITURES ON ACCOUNT OF SCIENTIFIC INQUIRY DURING THE LAST FOUR FISCAL YEARS, AND OF SALARIES FROM 1888 TO 1889.

EXPENDITURES ON ACCOUNT OF SCIENTIFIC INQUIRY, FISCAL YEAR 1886-'87.

Wood's Holl station.

Salaries.....	\$8,203.04
Temporary services.....	1,173.83
Traveling expenses.....	1,658.64
Subsistence.....	2,015.54
Rent of quarters.....	54.50
Storage quarters.....	50.00
Preservation outfit.....	219.02
Outfit of station.....	3,062.08
Plans for new launch.....	200.00
Apparatus.....	882.03
General material and supplies.....	4,022.97
Launch <i>Cygnat</i>	745.76
Stone wall, piles, etc.....	720.41
Repairs, etc., to buildings.....	1,781.01
Telephones.....	267.00
Live fish.....	44.10
Freights.....	923.69
Telegrams.....	10.21
Miscellaneous.....	235.40
	26,269.23

Washington station.

Salaries	\$6,647.50
J. H. Kidder and Thomas Watkins	1,904.65
T. W. Smillie	1,809.00
Traveling expenses	12.70
Apparatus and equipment	2.30
Materials and supplies	102.09
Specimens	12.65
Freights	41.49
Miscellaneous	50.00
	<u>10,582.38</u>

New Haven station.

A. E. Verrill and others	<u>\$2,588.20</u>
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Miscellaneous.

Charles H. Townsend	750.25
S. E. Meek	30.00
Sarah Joyce	60.00
	<u>840.25</u>
Total	<u>40,280.06</u>

FISCAL YEAR 1887-'88.

Wood's Holl station.

Salaries	\$8,459.25
Temporary services	836.58
Traveling expenses	1,704.10
Buildings and ponds	1,432.75
Apparatus and equipment	2,266.98
Fuel and light	2,516.69
Preservation equipment	331.00
Fish and eggs	326.49
Miscellaneous	1,010.50
	<u>18,884.34</u>

Washington station.

Salaries	5,961.58
Traveling expenses	95.88
Outfit	136.16
Stationery	23.15
Preservation equipment	332.39
Miscellaneous	1,696.05
J. H. Kidder	293.10
T. W. Smillie and others	959.68
	<u>9,497.99</u>

New Haven station.

Salaries	2,520.00
Traveling expenses	50.01
Stationery	5.25
Miscellaneous	6.90
	<u>2,582.16</u>

Miscellaneous.

Bessley's Point exploration.....	\$11. 18
Somer's Point exploration.....	691. 65
Schooner <i>Grampus</i> , special inquiry	261. 40
Fish preservation.....	18. 01
Sanderson Smith.....	420. 53
John A. Ryder (embryology)	293. 72
Determination of desirable food-fishes for propagation and distribution ..	550. 00
	2, 246. 49
Total.....	33, 210. 98

FISCAL YEAR 1888-'89.

Assistant in charge of scientific inquiry, salary,.....	\$2,400.00
Office of assistant in charge of Scientific Inquiry :	
Pay-roll	\$1, 674. 82
Furniture.....	259. 00
Equipment	88. 16
	2, 021. 98
Washington laboratory :	
Equipment.....	146. 55
Services	1, 283. 40
Preparation of reports, incidentals.....	353. 82
Incidental expenses.....	17. 93
	1, 801. 70
Wood's Holl laboratory :	
Equipment.....	385. 61
Services	1, 520. 64
Incidental expenses	31. 11
	1, 937. 36
General equipment.....	2, 164. 21
Investigation interior waters:	
Virginia, North and South Carolina, Tennessee: Field ex-	
penses	817. 42
Michigan :	
Field expenses.....	\$171. 34
Services	31. 45
	202. 79
Arkansas, field expenses.....	99. 05
Ohio River, incidentals.....	2. 25
Indiana, field expenses.....	104. 70
Iowa, incidentals	. 80
Hudson River, field expenses	178. 60
Colorado and Yuma Rivers	390. 05
Alaskan salmon rivers:	
Expenses	\$452. 61
Services	277. 50
	730 11
Alabama and Mississippi explorations	402. 15
Georgia, explorations	75. 55
	3, 003. 47
Miscellaneous investigations:	
Incidental expenses.....	184. 08
Temperature observations:	
Expenses of equipment.....	263. 12
Services	120. 00
Preparation of reports.....	35. 15
	418. 27
University of Indiana, preparation of collections and reports, interior wa-	
ters and steamer <i>Albatross</i> , by D. S. Jordan and others. Incidental ex-	
penses	102. 39
New Haven laboratory, pay-roll for July.....	210. 00
Inspection Wood's Holl station, and field work of steamer <i>Fish Hawk</i>	122. 68
Preparation of reports on <i>Albatross</i> collections, incidental expenses.....	18. 85
	14, 384. 99

FISCAL YEAR, 1889-'90. (To June 1.)

Assistant in charge of scientific inquiry, salary		\$2, 425. 00
Office of assistant in charge of scientific inquiry :		
Pay-roll	\$2, 310. 00	
Furniture	58. 50	
Equipment	101. 29	
		2, 469. 79
Washington laboratory :		
Furniture	904. 78	
Equipment	49. 89	
Services	780. 00	
		1, 734. 67
Wood's Holl laboratory :		
Equipment	123. 06	
Services	2, 064. 50	
Incidental expenses	57. 28	
Inspection of station	37. 15	
		2, 281. 99
General equipment		294. 30
Investigation, interior waters :		
Alaskan salmon rivers :		
Field expenses	\$1, 078. 88	
Services	680. 00	
Preparation of reports	21. 20	
		1, 780. 08
Colorado and Utah :		
Field expenses	1, 246. 70	
Services	150. 00	
		1, 396. 70
Missouri and Arkansas :		
Field expenses	529. 77	
Services	112. 50	
		642. 27
Yellowstone National Park :		
Field expenses	607. 01	
Preparation of reports	6. 25	
		613. 26
Georgia :		
Field expenses	99. 23	
Services	37. 50	
		136. 73
Iowa :		
Field expenses	75. 55	
Total, interior waters		4, 644. 59
Miscellaneous investigations, incidental expenses		12. 20
Temperature observations :		
Services	110. 00	
Incidentals	. 78	
		110. 78
University of Indiana, preparation of collections and reports, interior waters and steamer <i>Albatross</i> , by D. S. Jordan, C. H. Gilbert, and others.		
Incidental expenses		128. 68
Preparation of reports on <i>Albatross</i> collections :		
Incidental expenses		8. 20
		14, 110. 20

COMPARISON OF EXPENDITURES FOR SCIENTIFIC INQUIRY DURING THE PAST FOUR YEARS.

A proper comparison can not be made of the expenditures for scientific inquiry during the fiscal years 1887 and 1888, with those during 1889 and 1890, in view of the fact that an entirely different and more systematic classification of accounts was introduced at the beginning of the latter period. The charges which appear against

scientific inquiry on the account books of the Commission for these years are as follows:

1886-'87	\$40,280.06
1887-'88	33,210.98
1888-'89	14,384.99
1889-'90 (to June 1).....	14,110.20

The separate items for the first two years are shown in the following table:

1886-'87.		1887-'88.	
Washington Station.....	\$10,582.38	Washington Station.....	\$9,497.99
Wood's Holl Station.....	26,269.23	Wood's Holl Station	18,884.34
New Haven Station.....	2,588.20	New Haven Station.....	2,582.16
Miscellaneous	840.25	Miscellaneous	2,246.49
	40,280.06		33,210.98

During 1886-'87 about \$5,000 of the Wood's Holl expenditure was for permanent construction and equipment in establishing the station. Moreover, the Wood's Holl items for both 1886-'87 and 1887-'88 include the maintenance and operation of the station for fish-cultural as well as scientific inquiry purposes. Deducting \$5,000 for 1886-'87, and combining the expenditures for scientific inquiry and fish-culture in 1888-'89 and 1889-'90, the cost of maintaining and operating Wood's Holl Station during each of the four years appears as follows:

1886-'87	\$21,269.23
1887-'88	18,884.34
1888-'89	13,373.61
1889-'90	12,560.57

The following table represents the expenditure for scientific inquiry during the same four years plus the cost of maintaining and operating Wood's Holl Station for fish-culture. It furnishes the means of making a more just comparison of the expenditures than the first table given, but it should be understood that it represents a large expenditure each year which does not belong to scientific inquiry:

1886-'87	\$35,280.06
1887-'88	33,210.98
1888-'89	25,821.24
1889-'90	24,388.78

SALARIES AND PAY OF TEMPORARY ASSISTANTS, SCIENTIFIC INQUIRY, 1888-'89.

(Appropriation on account of inquiry respecting food-fishes and the fishing-grounds.)

Assistant in charge of division:

Richard Rathbun, 12 months, at \$200..... \$2,400.00

Office of assistant in charge:

H. R. Center, clerk, December, 1 month at \$50; January 1 to June 30, 6 months at \$83.33, \$499.98..... \$549.98

H. S. Hinrichs, clerk, July 1 to January 31, 7 months at \$40, \$280; February 1 to June 30, 5 months at \$60, \$300 .. 580.00

Frank McCormick, copyist, July 5 to March 31, 8 $\frac{2}{3}$ months at \$40, \$354.84; April 1 to June 30, 3 months at \$50, \$150. 504.84

E. G. Lang, draughtsman, November 23 to December 22, 1 month 40.00

1,674.82

Laboratory, Washington:

Dr. T. H. Bean, ichthyologist, July 1 to September 15, and October 15 to December 31, 1888, 5 months at \$175..... 875.00

Prof. L. A. Lee, temporary assistant, November 17 to 26; December 27 to January 23, omitting January 9 and 10, 1 $\frac{5}{8}$ months at \$150 174.20

W. C. Kendall, assistant, April 14 to June 30, 2 $\frac{1}{2}$ months at \$60 154.00

Thomas Watkins, attendant, July, 1 month 40.00

1,243.20

Laboratory, Wood's Holl.:

Prof. John A. Ryder, in charge, July 1 to September 30, 3 months, at \$150	\$450.00
Dr. Henry V. Wilson, in charge, May 17 to June 30, $1\frac{1}{2}$ months, at \$100	148.39
Prof. W. K. Brooks, temporary assistant, July 13 to Septem- ber 30, $2\frac{1}{3}$ months; June 18 to 30, $\frac{1}{3}$ month, at \$150	456.93
Dr. T. H. Bean, ichthyologist, September 15 to October 15, 1 month	175.00
Dr. T. H. Morgan, temporary assistant, August 1 to Septem- ber 30, 2 months, at \$50	100.00
Dr. C. F. Hodge, temporary assistant, June 15 to 30, 16 days, at \$2.50	40.00
James I. Peck, temporary assistant, June 28 to 30, 3 days, at \$2.50	7.50
V. N. Edwards, assistant, June 1 to 15, one-half month, at \$60	30.00
Richard Dana, June 20 to 30, $\frac{1}{3}$ months, at \$75	27.50
William Goffin, attendant, June 18 to 30, $\frac{1}{3}$ month, at \$20	8.67
	\$1,443.99

Temperature investigations:

Sarah Joyce, observer at Fort Washington, Md., 12 months, at \$10	120.00
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Investigation of interior waters.

Michigan:

Dr. C. H. Bollman, July 11 to August 19, $1\frac{3}{4}$ months, at \$25	31.45
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Alaska:

Dr. T. H. Bean, June, 1 month	200.00
R. E. Lewis, June, 1 month	40.00
Franklin Booth, June 22 to 30, $\frac{3}{8}$ month, at \$125	37.50
	308.95

New Haven, Conn.:

Prof. A. E. Verrill, July, 1 month	125.00
Miss K. J. Bush, July, 1 month	45.00
Miss C. E. Bush, July, 1 month	40.00
	210.00
	7,400.96

(Appropriation on account of vessels.)

Steamer *Albatross*:

C. H. Townsend, naturalist, July 1 to October 30, 4 months, at \$100, \$400; November 1 to June 30, 8 months, at 140, \$1,120	1,520.00
Prof. C. H. Gilbert, temporary naturalist, December 14, to June 30, $6\frac{1}{2}$ months, at \$175	1,151.61
A. B. Alexander, fishery expert, July 1 to October 30, 4 months, at \$90, \$360; November 1 to June 30, 8 months, at \$100, \$800	1,160.00
L. de F. Bartlett, ship's writer, July 1 to October 30, 4 months, at \$60, \$240; November 1 to July 1, 8 months, at \$69, \$552	792.00
	4,623.61

Steamer *Fish Hawk*:

Dr. C. B. S. Adams, medical officer, 12 months, at \$100	1,200.00
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Schooner *Grampus*:

W. C. Kendall, naturalist, February 4 to April 14, 1 month + $\frac{3}{8}$ months + $\frac{1}{3}$ month, at \$60	147.57
Dr. James A. Henshall, naturalist, January 25 to May 7, $3\frac{1}{4}$ months, at \$100	345.16
	492.73
	6,316.34

SALARIES AND PAY OF TEMPORARY ASSISTANTS, SCIENTIFIC INQUIRY, 1889-'90.

(Appropriation on account of inquiry respecting food-fishes and the fishing grounds.)

Assistant in charge of division:

Richard Rathbun, July 1 to August 31, 2 months, at \$200 ..	\$400.00	
September 1 to June 30, 10 months, at \$225	2,250.00	
		<u>\$2,650.00</u>

Office of assistant in charge:

H. R. Center, clerk, 12 months	1,200.00	
H. S. Hinrichs, clerk, 12 months	720.00	
F. McCormick, copyist, 12 months	600.00	
		<u>2,520.00</u>

Laboratory, Washington:

Dr. T. H. Bean, ichthyologist, October 13 to 31, $\frac{3}{8}$ month, at \$200	120.00	
W. C. Kendall, assistant, 12 months	720.00	
Dr. R. R. Gurley, assistant, June 11 to 30, $\frac{3}{8}$ month, at \$100 ..	66.66	
		<u>906.66</u>

Laboratory, Wood's Holl:

Dr. H. V. Wilson, assistant in charge, 12 months	1,200.00	
Prof. W. K. Brooks, temporary assistant, July 1 to September 24, $2\frac{1}{2}$ months, at \$150	420.00	
Prof. Edwin Linton, temporary assistant, July 3 to September 4, 64 days, at \$3 per day	192.00	
Dr. C. F. Hodge, temporary assistant, July 1 to 31, 31 days, at \$2.50 per day	77.50	
Dr. James I. Peck, temporary assistant, July 1 to September 24, 86 days, at \$2.50 per day	215.00	
William Goffin, attendant, July 1 to September 30, 3 months, at \$20 per month	60.00	
		<u>2,164.50</u>

Temperature investigations:

Sarah Joyce, observer at Fort Washington, Md., 12 months, at \$10	120.00	
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Investigation of interior waters:

Colorado and Utah:

Dr. David S. Jordan, July 16 to August 31, $1\frac{1}{2}$ months, at \$25	\$37.50	
Prof. B. W. Evermann, July 16 to August 31, $1\frac{1}{2}$ months, at \$25	37.50	
B. M. Davis, July 16 to August 31, $1\frac{1}{2}$ months, at \$25	37.50	
Bert Fesler, July 16 to August 31, $1\frac{1}{2}$ month at \$25	37.50	
		<u>150.00</u>

Missouri and Arkansas:

Prof. S. E. Meek, July 16 to August 31, $1\frac{1}{2}$ months, at \$25	37.50	
Louis Rettger, July 16, to August 31, $1\frac{1}{2}$ months, at \$25	37.50	
Frank M. Drew, July 16 to August 31, $1\frac{1}{2}$ months, at \$25	37.50	
		<u>112.50</u>

Georgia:

Dr. C. H. Bollman, July 1 to 12 }	37.50	
Bert Fesler, July 1 to 15		

Alaskan salmon rivers:

Dr. T. H. Bean, July 1 to October 12, $3\frac{3}{8}$ months, at \$200 ..	680.00	
		<u>980.00</u>
		<u>9,341.16</u>

NOTE.—Salaries for inquiry respecting interior waters excepting Alaska, have been merely nominal, to cover incidental expenses, wear and tear of clothing, etc.

(Appropriation on account of vessels.)

Steamer *Albatross* :

C. H. Townsend, naturalist, July 1 to August 31, 2 months, at \$140, \$280 ; September 1 to June 30, 10 months at \$150, \$1,500	\$1,780.00	
Prof. C. H. Gilbert, temporary naturalist, July 1 to September 15, 2½ months, at \$175	437.50	
A. B. Alexander, fishery expert, 12 months, at \$100	1,200.00	
N. B. Miller, assistant naturalist, 12 months, at \$100	1,200.00	
H. C. Fassett, ship's writer, 12 months, at \$69	828.00	
		\$5,445.50

Steamer *Fish Hawk* :

Naturalist and medical officer, at \$100 per month.		
Dr. C. B. S. Adams, July 1 to August 31	200.00	
Dr. William Stimpson, August 26 to March 9	648.38	
Dr. R. R. Gurley, March 11 to June 10	301.07	
		1,149.45
Dr. C. F. Hodge, temporary assistant, August 1 to September 30, 61 days, at \$2.50 per day		152.50

Schooner *Grampus*.

Prof. William Libbey, jr., temporary assistant, July 1 to September 24, October 7 to 24, 2 months - ¼ month + ⅓ month, at \$150 per month	507.10	
Prof. C. J. Rockwood, temporary assistant, July 15 to August 24, 1 ⅔ months, at \$125 per month	165.32	
Prof. Wm. F. Magie, temporary assistant, July 20 to September 18, 1 month + ⅓ month + ⅔ month	248.39	
Prof. M. McNiell, temporary assistant, August 20 to September 7, ⅓ + ⅔ month, at \$125 per month	77.55	993.36
		\$7,745.81

COPIES OF INSTRUCTIONS TO FIELD PARTIES, 1888-1890.

INSTRUCTIONS TO STEAMER ALBATROSS.

WASHINGTON, D. C., June 6, 1888.

SIR: After the necessary arrangements have been completed you will proceed to the Alaskan coast, in the region of the Shumagin Islands and Kadiak, for the purpose of making an exploration of the cod-fishing grounds, in accordance with the detailed instructions herewith inclosed, addressed to Prof. Leslie A. Lee, Assistant, in charge of the Scientific Staff.

No changes have been made with respect to the relations between the naval and civilian staffs, as they existed during the last cruise; but the present instructions are mainly limited to a discussion and explanation of the proposed investigations.

I am fully aware that the amount of work laid out is far more than you can expect to accomplish in the course of one season, but I have made the scheme broad and comprehensive, having implicit confidence in the judgment of yourself and Professor Lee, to make the best possible use of the means at your command.

The length of the cruise is left to your discretion, but it is my opinion that it should not continue far into the fall, both for the reason that it will be an expensive trip, and from the fact that there is much work which we are expected to do during the fall and winter on the coasts of Washington Territory, Oregon, and California.

On the return from Alaska you may report at any place in the Straits of Fuca or Puget Sound, having telegraphic facilities, or at San Francisco, as seems most expedient; but the fall explorations will probably begin at the North, providing the weather is propitious there at that time.

An interesting problem respecting the hydrography of the North Pacific Ocean has been suggested to me by Prof. James D. Dana, and as you may possibly have the opportunity to make some observations in that direction I copy a portion of his letter. It is as follows: "There is a point of great interest in connection with the ocean just off the west point of Alaska and the Aleutian Islands. You will note on the map of the Hydrographic Department soundings of 3,660 and 3,684 fathoms between 160° and 165° W., south of 55° N. The important question is whether those soundings indicate that a 3,000-fathom trough extends westward from there along a curved line parallel with the Aleutian Islands, so as to include the 4,037-fathom sounding near 171° 30' E., just southeast of the west end of the Aleutians. It would

be of great service toward an understanding of the Pacific depths if this point could be worked out. A German Bathymetric makes the 3,000-fathom area cover a large part of the North Pacific, north of 38° N., from the Japan Sea eastward. It seems more probable that the area is a narrow one, south of the Aleutians, bending around into the Japan Sea belt of deep water—a 3,000 and 4,000 fathom belt."

In order to fully cover the question raised by Professor Dana it appears to me that two series of deep-sea soundings would have to be made. One should follow the line of the Aleutian Archipelago to fill in the gap left by the Tuscarora soundings. The other would consist of several cross lines at right angles to the Aleutian Islands, and extending south of them a distance of several degrees. Such an exploration as this you would have neither the time nor the means to undertake during the forthcoming cruise, but it has occurred to me that you might, without much delay, during the passage out or on the return trip, make one such cross line, south of the Tuscarora soundings, off the region of the Shumagin Islands, or perhaps even farther to the westward. This digression should not be made, however, if it will in any way seriously interfere with the regular objects of the cruise.

Any other important hydrographic work that can be done without detriment to the interests of the Fish Commission, may be undertaken at your discretion, and the results communicated to the Navy Department.

Very respectfully,

M. McDONALD,
Commissioner.

Lieut. Commander Z. L. TANNER, U. S. N.,
Commanding steamer *Albatross*, San Francisco, Cal.

Alaskan cruise of the steamer Albatross, season of 1888.

WASHINGTON, D. C., June 6, 1888.

SIR: In the conduct of the explorations to be undertaken by the steamer *Albatross* during the coming summer, in the region of Alaska, you will be guided by the following instructions:

The scientific staff will consist of Prof. Leslie A. Lee, assistant in charge; Mr. Charles H. Townsend, assistant; Mr. A. B. Alexander, expert fisherman.

The instructions issued for the "guidance" of the scientific staff, under date of November 15, 1887, will be continued in force; but in consideration of the few persons composing the staff, you may sometimes find it necessary to disregard instruction No. 6, which requires that at least one member of the scientific staff shall always remain on board the ship.

Those portions of the instructions, issued at the same time, for the "conduct" of the scientific work, from Norfolk to San Francisco, which relate to observations, reports, etc., will also remain in force.

The cruise of 1888 will be undertaken for the purpose of exploring certain portions of the Alaskan coast, which are known to be frequented by the cod *Gadus morrhua*, in large numbers, with the special view of determining the extent, character, and resources of the off-shore grounds, suited to the purposes of fishing.

The region selected for exploration lies to the south and southeast of the Alaskan Peninsula, and extends from the Shumagin Islands, on the west, to and including Portlock Bank to the east of Kadiak Island, on the east, and from the mainland of the Alaskan Peninsula to the steep slope bordering the North Pacific Ocean; the location of this slope being indicated approximately off the Shumagin Islands, by the deep-sea soundings made by the U. S. S. *Tuscarora* in 1874. This region is the one now most resorted to by the American fleet of cod-fishing vessels in the Pacific Ocean. Its length, on a line parallel to the coast, is over 400 nautical miles; its least width about 80 miles. It will be impossible to entirely cover this area in the course of one season's work, and your explorations should begin in the neighborhood of the Shumagin Islands and be carried thence eastward.

The term "off-shore grounds," as used in these instructions, is intended to include all open water areas to within a short distance of the coast and islands.

So little is known respecting this entire region, that the field may be considered as wholly new, and requiring investigation as to all particulars.

Regular series of soundings should be made from near the mainland and the islands to the edge of the continental slope, and into depths of at least 100 or 200 fathoms, in order to ascertain the depth of water and the character of the bottom. The frequency of sounding, the manner of running the lines, and all the questions pertaining to this subject should be determined upon by consultation with Captain Tanner, who will take the hydrographic work in charge as heretofore. This investigation should be sufficiently thorough to afford a complete knowledge of the principal features of the

bottom. Where important banks or other inequalities of the bottom are indicated by the soundings, their outline and surface contour should be worked out with as much care as seems expedient.

In connection with the sounding operations, the dredge, beam-trawl, and other apparatus for obtaining specimens from the bottom should be employed as often as possible, to determine the richness of the bottom with respect to food for fishes.

The fishing appliances, such as hand-lines, trawl-lines, gill-nets, etc., should also be used frequently, in order to ascertain the abundance and quality of the cod and of other food fishes, especially the halibut. The records made in connection with the fishing operations should be as complete as those for dredging, and should include an account of the kind of apparatus used, the success attending its use, and the kind of bait employed.

A careful record should be made of the number, size, weight, and condition (lean or well fed) of the cod and halibut taken. Different markets demand special sizes of fish, and the average cod now caught in the in-shore waters of Alaska would probably not find a sale in the Eastern markets of the United States.

The contents of the stomachs of all important fishes taken should be examined, and as much of the contents saved as may be necessary to determine their food, and suggest the kinds of bait to be used in their capture. The same species should be examined with respect to the condition of their reproductive organs, with a view of ascertaining the breeding season of each species. An attempt should also be made to locate the spawning grounds of the cod and halibut, and information respecting this subject may possibly be obtained from the fishermen.

Constant inquiry should be made as to the best and most abundant species suitable for bait for the cod and halibut, whether fishes or invertebrates; the particular localities where they abound, and the best methods of capturing them, preserving them, etc. In fishing for cod and halibut with bait you should try all species of fishes and invertebrates that occur in sufficient abundance and seem to be adapted to the purpose. The value of a bait is known to change with the season, and sometimes abruptly. Dr. Bean states that the yellow fish, *Pleurogrammus monopterygius*, forms the best bait for cod in Alaska. The mussel is used extensively in England, but not in this country.

The amount of material, in the way of specimens, to be saved from your collectings is left to your discretion, and you should be guided in the matter by your experience in the same kind of work on the Atlantic coast.

The temperature of the water at the bottom and at intermediate depths, and the density of the water at the surface, bottom, and intermediate depths, should be determined in connection with the hydrographic work, in the same manner as heretofore, and as frequently as possible. The surface-water temperatures and the meteorological observations regularly entered in the ship's log, are undoubtedly sufficient for most purposes; but the conditions and changes in the weather should be carefully noted with respect to their effects upon pelagic fishes, should such fishes be observed, and their influence in regulating the fishing season, etc.

It is also important that the ocean currents should be studied with respect to their limits, velocity, causes, effects upon temperature, and upon the movements of fishes.

While the investigation of the off-shore grounds should be conducted especially in the interest of the cod fishery, no opportunity should be neglected to study the other economic species occurring in the same region, and with the same general objects in view.

The surface explorations should be pressed with vigor, especially if there are indications of surface schooling fishes which might afford a fishery either for food or bait. In using the small tow-net, state on the label or in the notes accompanying the collections, the distance traversed, in addition to the usual memoranda, in order to furnish data for determining the amount of life in a given area. The tow-net should also be used as frequently as possible just above the bottom in connection with the trawl, as was the custom on the Atlantic coast. A recent examination of the bottom towings has yielded very interesting results.

Whenever opportunities occur inquiries should be made of the fishermen who have visited the Okhotsk Sea, as to the relative merits of the cod grounds on the two sides of the North Pacific Ocean. These inquiries should relate to the size, quality, and quantity of the fish, the facilities for fishing, for obtaining supplies and shelter in stormy weather, the character of the grounds and of the weather, etc.

When detained in port or among the islands by reason of stormy weather, or from other causes, the opportunity should be taken to study the shallow water grounds and island shores with the same thoroughness as the outside waters. In this connection, your inquiries should also extend to the question of harbors best suited to the fishermen. Which offer the best facilities for obtaining supplies, for repairing, for curing the catch, etc.? Is the climate suitable for drying and otherwise preserving fish for export? Suggestions have been made relative to the establishment of curing stations on the islands, whence the fish could be carried by regular transports to

San Francisco and other southern ports. Kadiak is recommended by Mr. Dall as a site for such a station, from its affording the nearest timber to the fishing grounds available for repairs, from its being already a depot for the ice trade, and affording good anchorage; while the Aleuts might easily be trained in the curing of fish.

The fresh waters may also be examined, should the time permit, with special reference to the salmon and other fresh-water fishes. As this branch of inquiry, however, can be as well undertaken by a party sent by ordinary conveyance from Sitka or San Francisco, it is not advisable to engage in it to the neglect of any of the other and more important investigations previously described.

All information respecting the occurrence and habits of cetaceans, seals and other aquatic mammals, and also respecting the seal fishery will be of value. Interesting specimens should be saved whenever possible; and photographs or sketches may be made of specimens and of the haunts of those species which resort to the land. Suggestions by Mr. True and Mr. Lucas, for preserving skins and skeletons, are contained in your former instructions.

Attention should also be paid to the water birds, especially in their relations to marine fishes. What species prey upon fishes? Does their presence at any place in large numbers indicate the existence of schools of fishes at the surface? Are any of the species suited for bait? (See paper by Joseph W. Collins in Fish Commission Report for 1882, p. 311.) Appendix G of these instructions contains suggestions from Mr. Robert Ridgway relative to collecting and observing water birds. Skins and skeletons should be saved. Mr. Ridgway's instructions furnished in November last also relate to Alaskan birds.

The small amount of time which you will be able to spend on land may be utilized in such manner as you think best. It will be important to give some attention to the statistics of the fisheries in the regions in which you are exploring, but you will have neither the time nor the opportunity to consider this subject in a comprehensive way. In the study of the fisheries and fishery methods you will be guided by the remarks given in Appendix C.

The appendices forming part of these instructions should be given careful consideration, and in so far as they are applicable to the Alaskan region should guide you in your inquiries.

Appendix A relates to the investigation of ocean fishing grounds, and by a tabular arrangement of topics and questions presents a comprehensive scheme for the study of the entire subject.

Appendix B relates in the same manner to the natural history of different species of fish that may have economic value; and Appendix C to the fisheries and fishery methods.

Appendix D is a list of the Alaskan salt-water food-fishes and important marine invertebrates.

Appendix E contains descriptions of all the known Alaskan cod grounds.

Appendix F is a list of all papers bearing upon the Alaskan fishes and fisheries that have been published in the reports of the U. S. Fish Commission and U. S. National Museum, of which you are supposed to have a complete file on board.

Appendix G consists of suggestions by Mr. Robert Ridgway relative to the water birds.

With respect to our present knowledge of the aquatic mammals, of the fresh-water fishes, and of the fishery methods and statistics of Alaska, the five published sections of the quarto fishery report may serve as a basis for your investigations on those subjects. These same reports, together with the annual reports and bulletins of the Commission, and the proceedings and bulletins of the National Museum, contain a vast amount of information respecting all branches of the natural history and the fisheries of Alaska.

The area selected for exploration this year, with respect to the off-shore fishing banks, and described on the foregoing pages, is indicated on a general coast-survey map of Alaska, which is forwarded by the same mail with these instructions.

The separate instructions relative to the transplanting of the common soft clam, *Mya arenaria*, from San Francisco to Alaska, should be carried out if possible. Should the location indicated for planting, viz, Chignik Bay, seem to be too far from your first working ground, you may select such other place for the purpose as you think best. Chignik Bay was, however, strongly recommended by Mr. W. H. Dall, because of the character of its shores, especially in the coves on the south side of the bay, which he considers to be specially adapted to the growth of the clam, and sufficiently removed from human habitations to warrant their remaining undisturbed for some time.

Very respectfully,

M. McDONALD,
Commissioner.

Prof. LESLIE A. LEE.

Assistant in charge of Scientific Staff, steamer Albatross, San Francisco, Cal.

APPENDIX A.—*Suggestions relative to the investigation of ocean fishing grounds.*

Professor Baird recognizes four classes of ocean fishing grounds, viz: *In-shore*, *off-shore*, *deep-sea*, and *pelagic*. These are not separated by distinct lines of demarkation, but merge one into the other, and the physical and biological problems concerning them may each be outlined under one head for all. The principal points, with respect to each class of grounds, upon which information is desired are as follows:

IN-SHORE GROUNDS.

Location and extent.

Contour and character of the adjacent shores.

Configuration, character, and composition of the bottom; depth of water.

Ledges, banks, shoals, etc., worthy of special notice, should be located and described.

Are the shores suited to the use of various kinds of fishing appliances, such as seines, gill-nets, weirs, traps, etc.?

Occurrence of seal rookeries.

Breaks in the coast line, such as river mouths, bays, harbors, etc., and their influence upon the density and temperature of the water, and the amount of sediment.

OFFSHORE GROUNDS.

Mostly characterized by banks, ledges, and shoals, although the fishery often extends to the intervening depressions, or even over extensive flat bottoms, as in the Gulf of Maine.

The banks and other elevations should be considered, both individually and collectively, with respect to their location, extent, configuration (outline and surface contour), depth of water, geological structure, and character and composition of the bottom.

The same considerations, in so far as they apply, should be extended to the intervening depressions or gullies, and to the slopes on all sides of the banks, including the outer slope into deep water; and also to all other bottoms offshore which afford fisheries.

The connection and relations between the offshore and inshore grounds should be studied and described.

THE DEEP SEA.

Deep-sea fishes, strictly defined, do not enter into the question of the fisheries, and their surroundings should be treated only incidentally. Many economic species, however, range into comparatively deep water.

PELAGIC GROUNDS.

Pelagic or wandering fishes.—The region under treatment should be defined as to its location, extent, and surroundings. The mackerel grounds of the Eastern coast, for instance, are bounded on the one side by the coast and on the other by the Gulf Stream. All schools of migratory fishes that are observed should be noted, the species identified if possible, methods tried or suggested for their capture, and their habits ascertained so far as may be.

The problems to be studied are mainly of a physical character, as explained below.

PHYSICAL PROBLEMS.

THE WATER.

Tides.

Currents; tidal, general oceanic, etc.; character, extent, boundaries, depth, velocity, effect on temperature, on fishes, etc.; causes.

Temperature; surface, intermediate depths, bottom.

Density; surface, intermediate, bottom. The density of the surface water should be taken at frequent and regular periods.

Composition of the water.

Solids held in suspension, sediment.

Gases in solution.

Ice.

For the purpose of studying the composition and contents of the water, specimens should be preserved, in sealed bottles, whenever possible.

THE AIR.

Atmospheric conditions presumably affect only the pelagic and inshore grounds directly; but they also inconvenience and endanger the lives of the fishermen on all grounds. They are to be studied particularly with reference to their influence upon the pelagic fishes.

As to influence upon fishes; observe the relative influence of clear and cloudy weather, fogs, storms, temperature, etc., and the prevalence of each. Also, relative effect of daylight and darkness on the presence of schools of fish, their movements or shyness. Do they take the bait more at one time than another?

For the benefit of the fishermen; observe the occurrence and character, the period of duration and of greatest severity of fogs, storms, prevailing winds, etc., direction and force of winds generally; occurrence of ice, etc.

Thermometer and barometer observations should be recorded regularly.

Ports and anchorages—It is of importance to the fishermen that they should have positive information respecting all ports and safe anchorages within easy reach of the fishing grounds. Many of these have been surveyed and are plotted on the charts of the Coast Survey. The experience of the *Albatross*, however, may suggest the desirability of surveying new ports, or making further investigations of old ones, but such work, should not be undertaken by the *Albatross* to the neglect of those inquiries for which she has been specially detailed. Recommendations concerning this subject will be referred to the Coast Survey, in whose province it properly belongs.

ECONOMIC PRODUCTS OF THE FISHING-GROUNDS.

Animals and plants used for food, bait, etc. Faunal check-lists, with uses noted. Biographies of the more important species, in accordance with suggestions, forming Appendix B.

The fauna and flora considered as the basis of production and support of the economic species.

The principal objects of the cruise will be the determination of the distribution, abundance, and habits of the useful marine animals which occur upon the off-shore grounds, with special reference to those grounds. In this category are to be included not only the forms which are now used for food, bait, etc., but also all species which are available for such purposes. Most attention, however, should be paid to the cod and halibut, which are supposed to be the most important of the food species inhabiting the Alaskan region.

In studying the relations of the economic species to the grounds which they inhabit, it will be necessary to determine the character, abundance, and distribution of their food, in the same manner as has already been done on the eastern coast. This will involve the constant use of collecting appliances, both at the surface and at the bottom, and the preservation of materials for future study.

APPENDIX B.—*Suggestions relative to the inquiry which it is desirable to make respecting the natural history of important Alaskan fishes.*

Common name in different localities.

External characters.—Although the more important of the Alaskan food species have probably been sufficiently well described to insure their identification and their proper position in the classification, it will be advisable, whenever the opportunity occurs, to make further descriptions from living specimens, with special reference to those characters which are not preserved in alcoholic specimens. For instance, the color, size, and weight of the different sexes; relative proportions of the fish in general, and of the soft parts, etc.

Varieties.—All varieties should be noted and described and their peculiarities as to distribution, localization, etc., ascertained, so far as possible.

Abundance, in different places and at different seasons. At what seasons are they most abundant, and when can they be fished for with greatest success?

Distribution, both geographical and bathymetrical at different seasons. Position and extent of the localities where they occur and may be fished for. The subject of the fishing grounds, is, however, elsewhere discussed.

Habits.—Relations to environment, character of bottom, depth, temperature, density, tides, etc.

Relations to its own species; whether gregarious, solitary, grouped by age or sex at any season, predaceous, etc.

Relations to other species; whether preyed upon by them, or feeding upon them, etc.

Movements.—Do they perform regular migrations? Are there also irregular movements, by which they may be abundant some years and scarce or absent others?

What are the regions, character, extent, and cause of their regular movements? Are they caused by the reproductive instinct, by the search for food, or by the pursuit of enemies? How are they influenced by temperature, atmospheric and other physical conditions, or by human agencies?

Do they hibernate at any season? What is the time of arrival and departure? Length of stay? Certainty of arrival? Rate of progression, coming and going? Number and times of runs or schools in one season? Summer abode? Winter abode?

If anadromous, when do they enter and leave fresh water, and what are the movements up and down fresh water of the adults and young?

Food.—Kind (animal or vegetable), character (living, dead, etc.), amount. Enumerate the different species found in the stomachs, and estimate the relative quantity or numbers of each. When it is impossible to identify the species, preserve the stomach contents in alcohol.

Place of feeding, bottom, surface, shore, etc. Manner of feeding.

Life history.—Time, place and duration of spawning, both as to the individual and the species.

Number, size, appearance, color, mode and place of occurrence of the eggs. Manner of fertilizing the eggs. Length of period of incubation.

Rate of growth, changes in, and habits and localities of the young, its food, etc.

Size and age of mature fish. Special habits before, during, and after spawning. Special enemies of the eggs.

Decrease.—It is not probable that the question of decrease will require attention, but should a decrease be claimed by any of the fishermen its causes and amount should, if possible, be ascertained.

Enemies, diseases, etc.—Fishes, etc., which pursue and devour the species in large quantities.

Parasites, external and internal. All specimens should be collected and preserved, and the extent and character of the injuries they inflict, if great, should be noted.

Diseased specimens should be examined as to the character and possible effect of the disease, and its frequency of occurrence in the species.

Specimens (or portions of the specimen) showing the disease should be preserved.

Uses, present and prospective, as for food, bait, oil, etc.

APPENDIX C.—*Suggestions relative to the fisheries.*

The fisheries should be studied with reference both to present conditions and methods, and to their improvement by the introduction of new methods. The Alaskan fishery was quite fully covered by the fishery census of 1880, and the vessels, boats, and fishing gear known at that time are well represented in the fishery collection at the National Museum, in Washington. It is desirable, however, to ascertain what changes may have taken place since then; what new styles of boats or gear have been introduced, and to what extent the natives have adopted the appliances and methods of the white men. In view of the above statements, many portions of the following schedule will be found to be superfluous for your purpose, and these should be entirely disregarded. The schedule was originally prepared as though intended for a region the fisheries of which were unknown.

These subjects should be referred to the expert fisherman for investigation if he is competent to consider them.

In describing new vessels or boats the following points should be considered

- (1) Form of vessel; whether sharp or square stern, round or flat bottom.
- (2) Keel or center-board.
- (3) Decked, half-decked, or open.
- (4) Clinker or Carvel built.
- (5) Material used in construction; size of frame, thickness of planks, etc., material used for fastening.
- (6) Interior arrangements.
- (7) Rigging. This to include spars, sails, and rigging.
- (8) Dimensions: Length, breadth, depth, length of spars and oars, measurement of sails, etc.
- (9) Cost of building and where built.
- (10) Number of men in crew.

In discussing any special type of boat, the extremes and average of length may be given; and the measurements of one of about the average size should be recorded in full to show the general proportions. State the fishery in which each type is engaged.

Fishing gear.—New fishing gear should be described in detail and illustrated by sketches or photographs, unless corresponding with appliances well known on the Atlantic coast.

Routine of the fishery.—Manner of operating the fishery appliances; localities where used; time of day when in use, or when visited; number of men required to operate each appliance, etc.

Bait.—Character of the bait; species used for that purpose; amount used; relative value and abundance of different species.

Methods of preservation and uses.

Disposition of the catch.—Home use; markets; methods of transportation; prices to the fishermen, at wholesale, at retail.

The fishermen.—Number engaged in each fishery; nationality; manner of employment; on wages, on shares, etc.

Financial organization.—Including all questions of ownership of vessels, boats, and gear; amount of money invested; amount of wages; amount made on shares; relations between employer and employed.

Statistics.—Amount and value of catch of present and past years. Number of vessels, boats, men, appliances, etc.

Improvement of the fisheries.—New methods of fishing should be tested as with the cod gill net, beam trawl, with the use of toll bait, etc.

New kinds of bait should be tried and recommendations made as to the introduction of species, not native to the region for use as bait, such as the clam, *Mya arenaria*. As many kinds of bait as possible should be tried in your experiments, providing the species is abundant and easily obtained.

Observations should constantly be made looking toward recommendations for the improvement of the fisheries in all directions suggested by the above headings.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., September 8, 1888.

SIR: Your letters and reports from Alaska, to August 17, and your telegrams of the 3d and 6th instant, from Nanaimo, British Columbia, and Seattle, Wash., have been duly received and their contents noted.

As soon as the necessary repairs and arrangements at Seattle are completed you will begin a survey of the ocean fishing grounds tributary to the ports of Washington Territory, continuing the same as long as the weather will permit, after which you will proceed to San Francisco, Cal., and await further instructions.

You will consider it the principal object of the present cruise to study the distribution and abundance of cod and halibut in the Straits of Fuca and along the outer coast to the north and south of those straits, not, however, neglecting other subjects which in your judgment may lead to important practical results. No time should be spent in explorations in Puget Sound unless the weather becomes too severe for outside work.

The interest recently created with respect to the halibut fishery in this region makes it important that the grounds on which halibut occur most abundantly should be explored as thoroughly as possible, with a view to determine their outlines, depths, and principal characteristics. As it is also probable that good cod fisheries might be established in this vicinity, it will be advisable to keep a constant outlook for the feeding grounds of that species.

Very little positive information has been published relative to the fishery resources of the region about the strait of Fuca. Halibut have been reported as most abundant and of large size on deep sand-banks off the western side of Vancouver Island, while large bodies of cod are said to occur at both the northern and southern end of the same island and about Cape Flattery. Prof. D. S. Jordan also states that extensive halibut banks, resorted to by the Indians, are located about 8 miles northwest of Cape Flattery. You may be able to obtain more positive data on this subject from the local fishermen, and especially from the Gloucester smacks, which have recently started in the halibut fishery, should you meet with them.

It will be interesting to ascertain to what extent both the cod and halibut enter the straits of Fuca, and the advantages which these straits present for deep-water fishing.

As to the methods of inquiry to be pursued, you will be guided by the instructions furnished for the Alaskan cruise.

You will keep me informed, by telegraph, of your general movements, and of your arrival at port and the time of your departure therefrom.

Very respectfully,

M. McDONALD,
Commissioner.

Lieut. Comdr. Z. L. TANNER, U. S. N.,
Commanding steamer *Albatross*, Seattle, Wash.

No. 2.]

WASHINGTON, D. C., December 13, 1888.

SIR: As soon as possible after Prof. C. H. Gilbert has reported to you for duty you will proceed with the steamer *Albatross*, to make an investigation of the waters adjacent to the coast of California, between the latitudes of San Francisco and the boundary line between the United States and Mexico, with the respect to their fishery resources and the fishing grounds. The fishery resources of this region are undeveloped and practically unknown except in the vicinity of San Francisco and in the shallow waters about some of the larger settlements farther south. You will therefore consider it the principal object of the present cruise to determine the contour of the sea bottom, the location, extent, etc., of banks or other areas suited to fishing, and the distribution and abundance of food fishes and other marine animals occurring with them, over this entire region or so much of it as the time will permit, between the shore soundings and the outer edge of the submerged continental plateau, and beyond the latter where it seems expedient.

The beam trawl and other dredging and fishing appliances, as well as the surface nets, should be frequently employed, in order to secure as large collections as possible, from which to determine the character and richness of the fauna. The physical characteristics of the region, with special reference to the temperatures and densities of the water, should be thoroughly studied in connection with the other lines of inquiry marked out, and soundings should be made to the extent deemed necessary to supplement the work already accomplished on that coast by the Coast Survey and Navy Department. Shore and shallow water collecting should be vigorously pushed whenever the steamer is in port or anchored near the land, but this work should never be carried on to the detriment of the off-shore investigations, unless, in your judgment, important results may be attained thereby.

The fishing grounds off San Francisco demand particular attention and should be made the subject of a thorough inquiry, but it is left to your discretion whether this area should be studied first or be left until the end of the cruise. Special consideration should be paid to the fisheries off the coast of Santa Barbara County and among the islands in that region, from San Miguel Island to Santa Catalina and San Clemente. Cortez bank, situated about 100 miles off the coast opposite the boundary line between California and Lower California, should also be visited, if possible.

Density as well as temperature observations should be constantly made while in port, and it is also desirable to obtain as much information as possible respecting the character of the bottom and of the shores in the principal bays and harbors which you enter, with a view to determine their fitness for the planting of beds of oysters. The habits and the abundance of seals and sea-otters and of the various species of cetaceans should be studied at every opportunity.

About two months should be allotted to the explorations on the coast of California, after which you will proceed to the Gulf of California for the purpose of investigating the physical and natural history characteristics of this nearly inclosed area in the interests of the shad and oyster fisheries.

A series of dredgings, principally by means of the beam trawl, if possible, accompanied by surface towings and by the determination of serial temperatures and densities, should be carried through the entire length of the gulf, at varying distances from the land, but the upper part of the gulf, especially above Tiburon Island, should be most thoroughly explored in this respect. These investigations should be extended into the Colorado River, and, if possible, to a point above the mud flats at its mouth. In the region comprising the mouth of the Colorado River and the adjacent gulf coasts every possible means of collecting fishes which you have on board suited to the purpose should be tried with a view to detecting the presence of shad, which were first introduced into the Colorado and Gila Rivers in 1884.

You will also make it a special feature of the explorations in the Gulf of California to ascertain the conditions under which the native oysters thrive best, the location and chief characteristics of some of the principal beds, and the best means of obtaining and transporting supplies of the oyster to the coast of California. Shore collecting should be carried on at all favorable opportunities.

If at the close of these investigations sufficient time remains for the purpose, a line of soundings should be run from off Cape St. Lucas to the Revilla Gigedo Islands, and the naturalists may be allowed to visit Socorro Island, in order to collect specimens of the shore and land animals, respecting which very little is known at present.

You will return to San Francisco in time to refit for a cruise to the coasts of Oregon and Washington Territory, to begin about May 1, 1889.

Very respectfully,

M. McDONALD,
Commissioner.

Lieut. Comdr. Z. L. TANNER, U. S. N.,
Commanding Steamer *Albatross*, San Francisco, Cal.
(Care Alaska Commercial Company.)

No. 29.]

WASHINGTON, D. C., May 24, 1889.

SIR: The following instructions are issued for your guidance in conducting the investigations of the fishing grounds on the coasts of Oregon, Washington, and Alaska during the summer of 1889. In view of the fact, however, that during the first part of the season you will be subject to the call of one or more Senate committees, it is not expected that you will be able to carry them out in full, but the more important objects of the cruise are expressly indicated.

The purpose of your investigations in the North Pacific Ocean, the methods of work to be followed, and the character of results desired were set forth in considerable detail in your instructions of a year ago, and do not need to be repeated here.

Work on the coasts of Oregon and Washington should not be continued later than July 1, unless you are detained there at the service of one of the Senate committees. In this region hydrographic work should be made only an incidental feature of the investigations during the early part of the season, as it is most important to develop the actual resources of the banks or grounds marked out by your soundings of last autumn. This should be done by dredging and trawling and by the frequent use of hand-lines and trawl-lines. Surface collecting and temperature observations should also be continued. The localities which should receive particular attention are Heceta Bank, the vicinity of Tillamook Rock, the region off the mouth of the Columbia River, the bank off Gray's Harbor, and the grounds between Flattery Rocks and Barclay Sound. It is more desirable to explore the grounds off the coast of Oregon than those off Washington Territory, as the former are the least known at present.

The objective point of your cruise to Alaska will be that area of the southeastern part of Bering Sea which is bounded as follows, namely: On the north by the parallel of 60° N.; on the west by the meridian of 170° W.; and on the east and south by the mainland of Alaska and the Aleutian Islands. In the region thus defined, the depths are everywhere slight except off Unalashka and Umnak. It is desirable to locate as many good fishing-grounds as possible, ascertaining their extent, depth, and the character of the bottom; the richness of the bottom with respect to animal life; and the abundance and size of the cod and other economic species occurring upon them. It is impossible to predict where the best fishing-grounds will be found, but good fares of cod have been obtained from several places near the coast, between Unalashka and the mouth of Bristol Bay. The investigations should be begun in this part of the region and carried thence northward and westward as far as the time will permit. Information bearing upon this region is contained in my instructions of last year, and also in your report of operations in Alaska.

You will endeavor to ascertain the nature of the slime bottom described by the fishermen as occurring in some parts of Bering Sea, where it is said greatly to interfere with their fishing. It is desirable wherever possible to make longer trials for fish than was customary during the summer of 1888 in order that more complete data may be obtained relative to the size of the cod occurring upon the grounds. Cod averaging 28 inches (the eastern standard) and over were secured last year at only six or seven of your stations, a fact which, taken alone, might deter many fishermen from resorting to that region.

Nothing is known respecting the depths of water in the western part of Bering Sea, and it would be of great hydrographic importance, and also of value to the fishery studies of the region, if some information could be obtained on that subject. Three or four lines of soundings extending across this unknown area to the westward of about 173° west, being carried preferably in a northeast and southwest direction between the parallel of 60° north and the line of the Aleutian Chain would give sufficient data for present purposes, and should you find it expedient to run one or more of these lines the present season you are authorized to do so. The work should not extend far beyond the boundary line between the United States and Siberia, and a few dredgings should be made in connection with the soundings.

South of the Alaska Peninsula and the Aleutian Islands it is very desirable to obtain additional information respecting the following areas, partly explored by you last year, namely, off Unalashka, between Sannakh Bank and the Shumagin Islands, and between the latter Islands and Kadiak. While much hydrographic work will require to be done in these regions, it is of most importance to locate off-shore grounds where cod of large size can be caught abundantly, for the reasons explained above. This part of the coast should not be visited as long as you can work to good advantage in Bering Sea, but during the passage up or down the coast you may find it convenient to spend a short time there, especially if detained for any cause.

I would also call your attention to the expediency of extending the deep-sea soundings south of the Aleutian Islands farther to the westward, whenever a suitable opportunity occurs, but the present season will probably be too short for any work of that character.

You will arrange to have Mr. Alexander undertake the investigations of the commercial fisheries at all places which you visit, giving him the necessary facilities for going on shore for that purpose. Where there are opportunities for engaging in this

branch of inquiry, he should not be required to enter into the natural-history work, at least not until he has finished with the subject with which he is specially charged. The beginning made by Mr. Alexander last year in this direction has proved very valuable, and I desire to have him continue the work as actively as possible.

With best wishes for a successful season, very respectfully,

M. McDONALD,
Commissioner.

Lieut. Commander Z. L. TANNER, U. S. Navy,
Commanding Steamer *Albatross*, Seattle, Wash.

No. 106.]

WASHINGTON, D. C., January 21, 1890.

DEAR SIR: Your letters of the 9th and 10th instants, Nos. 134 and 135, were duly received. With respect to the number of officers required by the *Albatross* for the difficult work on the Pacific coast, I will communicate immediately with Commodore Ramsay and endeavor to have an additional watch officer ordered to the steamer. As you do not recommend any particular one for that position, I shall be obliged to leave the choice to the Bureau of Navigation.

Concerning the investigations on the California coast, I think it will be best to fix upon February 10 as the earliest day at which your work may begin. That will give Mr. Townsend the opportunity of reaching the ship in time by leaving here on the first of the month. You will please furnish me with an estimate of the cost of fitting out the ship for the next Alaskan cruise, and of the expenses of two months' cruising in Alaska, namely, for May and June. Having received this, and also your final bills for repairs at Mare Island, I will make a special allowance of money for the investigations on the coast of California, and that work should then be limited to the expenditure of that amount.

The California investigations should be confined within the area which you have not yet explored, namely between Point Conception and Humboldt Bay, and in carrying on the work you will be guided by the instructions already given you with respect to other portions of the Pacific coast. It is desirable that a most thorough investigation should be made of the region about San Francisco, and of all areas that might be made directly tributary to that city in respect to the fisheries.

You are given entire discretion as to the place of beginning the work, and as to the continuity of the same, dependent upon the weather, etc.

After completing the investigations on the California coast and before proceeding to Alaska, you will please prepare and transmit to me your annual report for the current year up to that time.

Very respectfully,

M. McDONALD,
Commissioner.

Lieut. Comd'r. Z. L. TANNER, U. S. N.,
Commanding Steamer *Albatross*, Navy-Yard, Mare Island, Cal.

No. 117.

WASHINGTON, D. C., February 19, 1890

DEAR SIR: I have to acknowledge receipt of your letter of the 10th inst., No. 145, giving estimates of expenses for the balance of the fiscal year. I have referred the same to Mr. Gill, and in a few days will write you positively as to the amount that can be expended. In the mean time, however, there is no reason for changing the plans already sent you with respect to the work on the California coast, which may be begun as soon as the ship is ready.

While Mr. Townsend was in Washington, I talked with him about the desirability of studying, whenever there was an opportunity, the physical and biological conditions of San Francisco Bay, with special reference to oyster culture. There is no more important problem connected with our work on the California coast than the investigation of that bay with the view of ascertaining whether any part of it will prove suitable for the natural breeding of oysters. The *Albatross* is too large to engage directly in this work, but when she is detained at San Francisco or the navy-yard for any length of time, I would like to have Mr. Townsend make such researches as he can with whatever assistance you may be able to render him from the ship.

What is especially desired is that temperature and density stations be run over the shallow parts of the bay, which seems to offer advantages in other ways for oyster-planting. The stations should be close together and be accurately located, observations being made at both the surface and bottom, and the same areas being examined at different times of the year if possible. It is not expected, of course, that the en-

tire bay can be covered by Mr. Townsend, and it is best that his efforts should be limited to small areas, and the work very thoroughly done. It is also desirable that the existing oyster beds be examined in the same way.

The shore and shallow water invertebrates should also be collected and preserved for examination in Washington, and the character of the bottom where the density and temperature observations are made should be noted.

This letter will probably not reach you in time to have Mr. Townsend do much, if any, work of this character this spring, but the problem can be taken up from time to time as the opportunities arise.

Very respectfully,

M. McDONALD,
Commissioner.

Lieut. Comd'r Z. L. TANNER, U. S. Navy,
Commanding steamer Albatross, Navy-Yard, Mare Island, Cal.

No. 136.]

WASHINGTON, D. C., April 23, 1890.

DEAR SIR: In conducting the investigations of the Alaskan fishing grounds during the season of 1890, you will be guided by the following instructions:

The area to which attention should chiefly be paid is essentially the same that was indicated in my letter of May 24, 1889, namely the southeastern part of Bering Sea, bounded on the north by the parallel of 60° N., on the west by the meridian of 175° W. (in place of 170° W.), and on the south and east by the islands and mainland of Alaska. Over much of this region the soundings indicate comparatively shallow water, but the extreme western and southwestern portions are entirely unknown.

The principal object of your inquiries in this region will be to locate and define the grounds suitable for cod fishing, and to determine the abundance and size of the cod and other economic species occurring upon them, as well as the richness of the bottom with respect to animal and plant life. Certain localities, especially in the vicinity of the Aliaska Peninsula, Unimak and Unalashka Islands, are reported to be richly supplied with cod, as mentioned in previous communications. This area is also said to furnish a larger size of cod, and to be favored generally with better weather during the fishing season than the grounds south of the Aliaska Peninsula, to which your inquiries were directed in 1888. It will be of the greatest importance to obtain as much information as possible respecting those questions which must determine the relative value of the fishing grounds in these two adjoining regions.

While the hydrographic work should not be slighted in any way, I am particularly desirous of having more attention paid to the natural-history investigations than was possible in 1888, both by dredging with the beam-trawl and dredge and by hand-line and trawl-line fishing. The actual records of fish taken, showing their abundance, size, etc., afford, in a measure, the most substantial evidence of the value of the grounds for fishing purposes. According to the report of your operations in 1888, cod averaging 28 inches (the Eastern standard) and over were obtained on the grounds south of the Aliaska Peninsula at only six or seven stations, a fact which, taken alone, might influence many fishermen against resorting to that region. By making longer and more frequent trials with the fishing appliances, a larger average in size may possibly be secured. The "slime" bottom, which is said to be characteristic of some parts of Bering Sea, and greatly to interfere with fishing operations, should be made the subject of careful investigation.

With an accomplished ichthyologist and a skilled fishery expert on board, it is to be expected that the fishes of this important region will be as thoroughly studied as the time will permit. Respecting the general collections, as large a representation as possible of all the forms obtained should be preserved. While the surface waters will probably be comparatively barren, the towing nets should be constantly used, and specimens of the bottom material without cleaning should be saved at many stations. Shore collecting should also be carried on whenever an anchorage is made near the land.

Although the interesting Seal Islands are contained within this area, it will be needless to undertake any land investigations with reference to the seals, as a party consisting of Henry W. Elliott, in behalf of the Treasury Department, and William Palmer, in behalf of the National Museum, will proceed to those islands for that special purpose some time in May. Should an opportunity occur, however, to render these persons any assistance in the line of their work without interfering with your regular duties, you are authorized to do whatever seems expedient. Observations relative to the habits and distribution of the seals at sea can not fail to be of value, and they should be made whenever the time and opportunity will permit. Scarcely anything is known, from careful inquiry, respecting their aquatic habits away from the vicinity of the shores, and it will be especially interesting to determine their in-

fluence upon the fishing grounds in the neighborhood of the Seal Islands. All existing information on this subject is probably contained in the report of Henry W. Elliott, published by the Tenth Census, and in Section I of the Fisheries and Fishery Industries of the United States.

In accordance with the request of the Secretary of the Treasury, you will, while in this region, make an investigation of the salmon fisheries at the mouth of the Nushegak River, and, if the circumstances require it, take steps to enforce the provisions of the law for the protection of the salmon fisheries of Alaska, as explained in the separate instructions contained in my letter No. 135, of this date.

Your investigations in Behring Sea should also be carried into the unexplored area to the west of the meridian of 175° W. to such an extent as the time will permit. You will confine your operations mainly within the boundary of the United States, but it will be important to obtain at least one or two complete sections across Bering Sea to near the Siberian coast. The direction in which the lines should be run is left to your judgment. It is generally supposed that this region is occupied by much deeper water than the eastern part of Bering Sea. In the case of finding shoal water valuable fishing grounds may be discovered, and these should be studied in the manner previously described. Otherwise the hydrographic results alone could not fail to be of great importance, and in either case it will be interesting to determine the relations between the main body of Bering Sea and the deep belt of water discovered by the U. S. S. *Tuscarora* along the northern side of the Aleutian Islands. The outer margin of the plateau composing the eastern part of Bering Sea, if this is bordered by deep water, should be traced out and defined.

As many dredgings as possible should be made in connection with this survey, their number being regulated by the depth of water and the time necessary to make them. We have very few records of temperature, and none of density observations for Bering Sea, and these subjects should receive the proper amount of attention. Moreover, in the deeper water, serial temperatures should be taken at several stations in different parts of Bering Sea, these stations being selected with the view of securing data to show the thickness and distribution of belts of equal temperature over the entire region explored.

After finishing the work in Bering Sea, if there is time for still further investigations, it will be most important to return to the grounds explored by you in 1888, to the south of the Aleutian Islands and the Alaska Peninsula, with the special object of obtaining further information respecting the resources of the five principal banks and of completing the surveys of the intervening areas. Dredging and fishing operations should chiefly be carried on if the time is limited, and the dredging stations should be extended into comparatively deep water on the edge of the plateau. This part of the coast should not be visited for the purpose of making investigations, however, as long as you can work to good advantage in Behring Sea.

If it is feasible to run one or two additional lines of deep-sea soundings south of the Aleutian Islands, with a view of obtaining further data respecting the westward extension of the deep trough indicated by previous soundings, you are authorized to make them. It will also be important to use the beam-trawl one or more times in the same connection. Weather and other conditions permitting, you will make several dredgings in moderately deep water during the return trip southward, in order to obtain material illustrating the marine fauna occupying the area between Alaska and the United States.

Upon the completion of the cruise you will proceed to Seattle or San Francisco, as seems most expedient in your judgment. If any work is carried on during the fall, it now seems most advisable to make the surveys between San Francisco and Cape Mendocino, but conditions may arise before then which will necessitate a change in the plans.

It has not been considered necessary to incorporate in these instructions the detailed explanations which accompanied the instructions in 1888. The methods of work to be pursued and the character of results desired are already sufficiently well known. Attention has been specially called, however, to the importance of doing a larger amount of natural history work than in 1888, as the permanent value of fishing grounds is largely dependent upon the richness of the bottom in animal life. At all places which you visit Mr. Alexander should be charged with the study of the commercial and local fisheries, if such exist, and be given the necessary facilities for going on shore for that purpose, being relieved from all other duties until that special investigation has been completed.

Very respectfully,

M. McDONALD,
Commissioner.

Lieut. Commander Z. L. TANNER, U. S. Navy,
Commanding Steamer *Albatross*, Navy-Yard, Mare Island, Cal.

No. 135.]

WASHINGTON, D. C., April 23, 1890.

DEAR SIR: The Treasury Department is in receipt of information that four canneries located on the Nushegak River, which empties into the upper part of Bristol Bay, are about to build a trap or dam completely across Wood River, one its tributaries, in violation of the act of Congress for the protection of the salmon fisheries of Alaska, approved March 2, 1889. Wood River enters the Nushegak about 25 miles above its mouth and is said to be about one mile wide. It is reported to be one of the finest salmon rivers in Alaska.

The Secretary of the Treasury has directed that the revenue steamers cruising in Bering Sea be instructed to enforce the law so far as the circumstances will permit, but as the number of those steamers is limited he has requested that the steamer *Albatross* investigate the subject, and in case the law has been violated, that she take the necessary steps to carry out the provisions of the same. A letter clothing you with full power and authority in the matter is herewith inclosed, together with copies of the law and instruction as to the manner of proceeding in case any action is required.

You will make this one of the first objects of your cruise in Bering Sea, and comply with the instructions of the Secretary of the Treasury to the fullest extent possible.

It will also be important, while you are in the Nushegak River, to make some observations along the lower part of the river respecting its general characteristics, and also, if possible, respecting the runs of fish, etc. Such an investigation is in accordance with the act of March 2, 1889, but it is not advisable to detain the *Albatross* upon it more than a few days.

Very respectfully,

M. McDONALD,
Commissioner.

Lieut. Commander Z. L. TANNER, U. S. Navy.
Commanding Steamer *Albatross*, Navy-Yard, Mare Island, Cal.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., April 18, 1890.

SIR: You are hereby clothed with full power and authority to enforce the provisions of law contained in the act of Congress approved March 2, 1889, providing for the protection of the salmon fisheries of Alaska, which prohibits the erection of dams, barricades, or other obstructions in any of the rivers of Alaska, with the purpose or result of preventing or impeding the ascent of salmon or other anadromous species to their spawning-grounds.

Respectfully, yours,

GEO. S. BATCHELLER,
Acting Secretary.

Lieut. Commander Z. L. TANNER, U. S. Navy,
Commanding Steamer *Albatross*, San Francisco, Cal.

[Circular.]

Protection of salmon fisheries of Alaska.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., March 16, 1889.

TO COLLECTORS AND OTHER OFFICERS OF THE CUSTOMS:

The following provision of the act approved March 2, 1889, entitled "An act to provide for the protection of the salmon fisheries of Alaska," is hereby published for the information and guidance of all concerned:

"That the erection of dams, barricades, or other obstructions in any of the rivers of Alaska, with the purpose or result of preventing or impeding the ascent of salmon or other anadromous species to their spawning grounds, is hereby declared to be unlawful, and the Secretary of the Treasury is hereby authorized and directed to establish such regulations and surveillance as may be necessary to insure that this prohibition is strictly enforced and to otherwise protect the salmon fisheries of Alaska; and every person who shall be found guilty of a violation of the provisions of this section shall be fined not less than \$250 for each day of the continuance of such obstruction."

Collectors and all other officers of the customs, and officers under the jurisdiction of this Department who may be assigned to duty in Alaska, will see that the requirements of said section are strictly observed, and that no dams, barricades, or other obstructions are placed in any of the rivers of Alaska, with the purpose or result of preventing or impeding the ascent of salmon or other anadromous species to their spawning-grounds; and should any such dams, barricades, or other obstructions be discovered, to warn the persons who erected the same to immediately remove them and thereafter to report the persons (with statement of facts) to the United States attorney of Alaska for prosecution under the said section, and also to forward duplicate reports to this Department for its information.

Officers of the Revenue Marine Service on duty in Alaska waters are hereby required so far as practicable to assist officers of the customs in Alaska in seeing that the requirements of the statute are strictly enforced.

HUGH S. THOMPSON,
Acting Secretary.

Seal and salmon fisheries of Alaska.

TREASURY DEPARTMENT, *March 25, 1889.*

The act of March 2, 1889, and the proclamation of the President thereunder, dated March 21, 1889, regarding the protection of the seal fisheries of Alaska, are published for the information and guidance of collectors and other officers of the customs, officers under the jurisdiction of the Treasury Department, assigned to duty in Alaska, and others concerned:

AN ACT to provide for the protection of the salmon fisheries of Alaska.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the erection of dams, barricades, or other obstructions in any of the rivers of Alaska, with the purpose or result of preventing or impeding the ascent of salmon or other anadromous species to their spawning grounds, is hereby declared to be unlawful, and the Secretary of the Treasury is hereby authorized and directed to establish such regulations and surveillance as may be necessary to insure that this prohibition is strictly enforced, and to otherwise protect the salmon fisheries of Alaska; and every person who shall be found guilty of a violation of the provisions of this section shall be fined not less than two hundred and fifty dollars for each day of the continuance of such obstruction.

SEC. 2 That the Commissioner of Fish and Fisheries is hereby empowered and directed to institute an investigation into the habits, abundance, and distribution of the salmon of Alaska, as well as the present conditions and methods of the fisheries, with a view of recommending to Congress such additional legislation as may be necessary to prevent the impairment or exhaustion of these valuable fisheries, and placing them under regular and permanent conditions of production.

SEC. 3 That section nineteen hundred and fifty-six of the Revised Statutes of the United States is hereby declared to include and apply to all the dominion of the United States in the waters of Behring Sea; and it shall be the duty of the President, at a timely season in each year, to issue his proclamation and cause the same to be published for one month in at least one newspaper, if any such there be published, at each United States port of entry on the Pacific coast, warning all persons against entering said waters for the purpose of violating the provisions of said section; and he shall also cause one or more vessels of the United States to diligently cruise said waters and arrest all persons, and seize all vessels found to be, or to have been, engaged in any violation of the laws of the United States therein.

Approved March 2, 1889.

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA.

A PROCLAMATION.

The following provisions of the laws of the United States are hereby published for the information of all concerned:

Section 1956, Revised Statutes, chapter 3, title 23, enacts that "no person shall kill any otter, mink, marten, sable, or fur seal, or other fur-bearing animal within the limits of Alaska Territory, or in the waters thereof; and every person found guilty thereof shall, for each offense, be fined not less than \$200 nor more than \$1,000, or imprisoned not more than six months, or both, and all vessels, their tackle, apparel, fur-

niture, and cargo, found engaged in violation of this section shall be forfeited, but the Secretary of the Treasury shall have power to authorize the killing of any such mink, marten, sable, or other fur-bearing animal, except fur-seals, under such regulations as he may prescribe, and it shall be the duty of the Secretary to prevent the killing of any fur-seal, and to provide for the execution of the provisions of this section until it is otherwise provided by law, nor shall he grant any special privileges under this section."

* * * * *

Section 3 of the act entitled "An act to provide for the protection of the salmon fisheries of Alaska," approved March 2, 1889, provides that:

"SEC. 3. That section nineteen hundred and fifty-six of the Revised Statutes of the United States is hereby declared to include and apply to all the dominion of the United States in the waters of Behring Sea, and it shall be the duty of the President at a timely season in each year to issue his proclamation and cause the same to be published for one month at least in one newspaper (if any there be) published at each port of entry on the Pacific coast, warning all persons against entering such waters for the purpose of violating the provisions of said section, and he shall also cause one or more vessels of the United States to diligently cruise said waters and arrest all persons and seize all vessels found to be or to have been engaged in any violation of the laws of the United States therein."

Now, therefore, I, Benjamin Harrison, President of the United States, pursuant to the above-recited statutes, hereby warn all persons against entering the waters of Behring Sea, within the dominion of the United States, for the purpose of violating the provisions of said section 1956, Revised Statutes; and I hereby proclaim that all persons found to be, or to have been, engaged in any violation of the laws of the United States in said waters will be arrested and punished as above provided, and that all vessels so employed, their tackle, apparel, furniture, and cargoes, will be seized and forfeited.

In testimony whereof I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the city of Washington this twenty-first day of March, one thousand eight hundred and eighty-nine, and of the independence of the United States the one hundred and thirteenth.

BENJAMIN HARRISON.

By the President:

[SEAL.] JAMES G. BLAINE,
Secretary of State.

INSTRUCTIONS TO STEAMER FISH HAWK, OYSTER-STAR-FISH INVESTIGATIONS.

Scheme of operations with respect to the proposed investigation relative to the oysters and oyster grounds of Long Island Sound, and Rhode Island, season of 1890. (Submitted May 19, 1890.)

PURPOSE.

The purpose of this inquiry is as follows:

- (1) To investigate the ravages of star-fishes and other natural enemies upon the oyster beds, and to determine methods of checking the same.
- (2) To ascertain if the reported deterioration in the quality of oysters and the failure to obtain a set of spat during the past two years were actual facts, and if true to determine their causes and suggest remedies.
- (3) To inquire into the expediency and possibility of introducing into the Long Island Sound region improved methods of oyster culture, and of utilizing for artificial beds upon a larger scale the shallow waters along shore where means of protection against enemies can be provided.

EXPLANATORY NOTE.

While the purpose set forth above is of the nature of three distinct problems, the inquiries necessary in respect to each of them require the examination of much the same field, while together they involve practically an investigation of the entire oyster question in Long Island Sound, and Rhode Island, and demand a broad and liberal treatment of the subject. The information required as a basis for deduction is explained under the following heading.

SCOPE AND CHARACTER OF THE INFORMATION REQUIRED.

(1) *The topography of the bottom and of the shores throughout the entire region.*—This subject is sufficiently covered for all general purposes by the charts of the U. S. Coast and Geodetic Survey. It may be advisable, however, to have special surveys made of some of the shore areas in relation to oyster cultural plans; but this work can be done by the officers of the steamer *Fish Hawk*, and it may also be possible to obtain township maps giving the desired information with respect to some places.

(2) *Location and topography of the oyster beds.*—For New York these beds are all represented on State oyster maps; for Connecticut those within State jurisdiction are shown on the maps of the Shell-Fish Commission, and the same together with the grounds in town jurisdiction on the maps of the State Bureau of Labor Statistics. The township grounds on the latter, however, are not in sufficient detail to be of much service in our inquiry. The Rhode Island maps have not been brought down to a later date than 1880, except for the changes noted by the *Fish Hawk* in 1888. Massachusetts has no maps of its oyster grounds.

(3) *Character, composition, and condition of the bottom.*—The inquiry should relate both to the oyster grounds and to the adjacent region, and should extend to a depth of several inches below the surface of the bottom, providing the latter consists of mud and there is a probability of its being underlaid by a stratum of sand or hard bottom. The rake dredge would be most efficacious in this investigation, but being harder to work than the common dredge, should only be used when occasion requires it.

Under this heading are included the observation of all material other than life and cultch found upon the bottom, and the investigation of shallow as well as deep water areas.

(4) *Character of the shores and islands adjacent to the oyster territory.*—These should be studied with reference to oyster culture in accordance with methods that have been suggested by the Fish Commission. Observations should relate to the height, configuration, and composition of the shores; to the existence of ponds and springs close to the same, the density and temperature of their waters, etc.

(5) *The rivers and smaller streams flowing into the sound adjacent to the oyster territory.*—The character of the bottom and shores at the mouths of those streams and their suitability for oyster culture; the density and temperature of the water with reference to the same subject, and to the effect upon neighboring oyster-beds of the overflow of water from them.

(6) *The general movement of the body of water occupying the basin of Long Island Sound and adjacent areas.*—This branch of the inquiry will, through the courtesy of the superintendent of the U. S. Coast and Geodetic Survey, be in charge of an assistant at that survey, who will prepare a plan for the same.

Observations respecting local currents may also require to be made, in connection with the study of the pollution of the waters, in order to determine the origin of the pollution, if any is found to exist.

(7) *The density and temperature of the water over the region included within the scope of the inquiry, the same to be determined both at the surface and at the bottom.*—With respect to the open waters, especially off shore, it will be sufficient to make these observations at each dredging station. Off the mouths of rivers and in more or less inclosed areas it may be advisable to make more detailed observations.

(8) *The chemical examination of the water with reference to its pollution.*—No investigation of this character, so far as we are aware, have yet been made for the oyster region of New England and New York. They are suggested by the researches of the steamer *Fish Hawk* in Long Island Sound during 1889. The character of the work and the methods of analysis to be followed will be based upon the opinions of a competent chemist, and a suitable person will be employed to make the tests on board the steamer.

The localities to be examined will be indicated by the person in charge of the oyster inquiry, but the observations should cover a large part of the Sound in order to determine the extent of any pollution discovered, and to afford the means of comparing the different parts of the Sound in this respect. The condition of the oysters should be ascertained in each locality where chemical tests are made, if they occur there, to determine the possible effects of pollution upon their welfare.

The origin of any pollution discovered should be traced, and the occurrence of offal or other injurious refuse in observable quantities should be noted.

(9) *The character and condition of the oyster-grounds with respect to collectors or cultch.*—The composition and quantity of cultch. Of what shells and other material does it consist? When was it deposited, and what is its present condition? Is it regularly taken up, cleaned, and deposited again just previous to each spawning season? Are fresh shells deposited without reference to the existence of old ones upon the bottom, and when are they so deposited? At regular intervals? If the cultch is not clean, in what manner is it fouled? Are the shells covered with loose sediment, adherent mud, or with a layer of vegetable or animal growth? If the latter, what is its char-

acter? Do worm-tubes grow to the extent of being harmful? The same with respect to sponges.

(10) *The character and condition of the oyster-grounds with respect to live oysters.*—What is the relative number of oysters to a given area? What are their sizes and ages? What proportion belongs to the set of the previous year? What is the condition of the oysters of all ages?

Are the oysters natives, regularly cultivated, or only planted for convenience of trade or for fattening? If from other regions, state their origin? What is origin of seed, and is the product sold to the market or for seed? Give full particulars in every instance where the information can be obtained.

(11) *History of each oyster-bed* or group of beds from the time they were first started.

(12) *The fauna and flora of the oyster-grounds, and also the adjacent regions.*—Lists of species, abundance, habits, etc. How do they differ in these respects?

(13) *The natural history of the oyster*; embryology, life history under different conditions, relations to environment, food, etc.

(14) *Distribution of the common mussel (*Mytilus edulis*) and of mussel beds in the oyster region.*—In the case of beds, their size, character and associated animals and plants. On what kinds of bottom do they occur? Are they infested by star-fishes, and to what extent? Are the mussels utilized for any purpose, and for what?

(15) *The enemies of the oyster-beds.*—What are the enemies that have been observed upon oyster-beds—star-fishes, drills, winkles, worm-tube growths, etc?

What are the abundance, distribution, and relative harm done by each kind?

At what time of the year has each kind been observed and when is each most abundant and destructive?

What sizes of oysters do the star-fishes attack and which suffer most by their attacks?

The same with respect to the drills and winkles.

To what extent is damage done by the sandy or other worm-tube builders in covering over and smothering oysters?

Are the enemies increasing or decreasing in abundance with any regularity from year to year, or are they entirely fitful in their attacks, being abundant upon the beds some years and scarce others?

Are some beds subject to the attacks of star-fishes and others not?

If so, how does the one class of beds differ from the other? With respect to the beds that are attacked, to what extent do they differ in the amount of damage done or in the number of enemies that visit them?

Are all parts of a bed equally subject to the same injuries, and, if not, how does the area attacked differ from the rest?

Do the star-fishes and other enemies trouble both native and introduced oysters to the same extent, and, if not, what is the difference?

What other animals besides oysters do the star-fishes feed upon naturally to any great extent? What animals, if any, feed upon star-fishes? Are star-fishes subject to diseases of any kind?

How are star-fishes distributed during the breeding season? Do they congregate in "clusters," and, if so, how large are the clusters, and how far apart? Is there any way of determining the location of such clusters? Would a vigorous war upon the clusters at that time have any appreciable effect in diminishing the number of star-fishes?

Where are the star-fishes when not widely distributed over the oyster grounds? Are there any particular areas to which they resort? What is the relation of natural beds to planted beds in that respect? Is there any common ground where star-fishes collect outside of the oyster beds? If so, what is its location and character?

The natural history of each of the enemies of the oyster, and especially their embryology, breeding and feeding habits, migrations. Rate of progression of star-fishes.

History (and extent) of the damage done to the oyster beds by natural enemies, and also resulting from other causes, such as being buried by mud or sand, or destroyed by impurities in the water. This history may date back as far as positive information can be obtained, but is most important for the period since 1880.

What is the value of dried or prepared star-fishes as a soil fertilizer? Could the preparation of star-fishes for that purpose be made profitable? How could they be prepared? Are they now used; in what way; to what extent; and for what special purpose?

(16) *Are the oyster beds* subject to enroachment by sand or mud, covering and smothering the oysters; from what cause; to what extent, and how may the same be remedied?

(17) *Protecting the beds.*—Under this head we include methods proposed for preventing the star-fishes entering on the oyster beds. They should be considered with reference to their efficiency and to the cost of their construction and maintenance. The following methods have been suggested:

By barriers of coarse wire-netting or other materials, surrounding the beds and

carried up to the surface of the water. Such structures could only be used in shallow water, and are not to be given consideration in connection with the off-shore beds.

By baited traps set around the beds and frequently hauled. Such traps were used in 1889 without success, but should be tried again.

By beds of mussels planted around the beds. This method might answer in some places, but it is still to be positively determined whether the star-fishes prefer mussels to oysters, and if they will remain upon the former during an entire season, in case the mussel beds are sufficiently extensive.

The oystermen objected to this method in 1889, claiming that the mussels accumulate filth about the beds, and in this they may be correct.

By bringing fresh water into contact with the beds to such an extent as to reduce its salinity below that in which star-fishes can live. This water might be brought in pipes to the shallow-water grounds near shore, and distributed by means of numerous branch pipes pierced with holes. The scheme, however, is not promising from many points of view.

By keeping the area surrounding the beds clear of star-fishes through the agency of collecting appliances as explained below.

(18) *Clearing the beds after they have been attacked by star-fishes.*—The actual capture and killing of the star-fishes as they appear upon the beds is probably the only efficacious remedy with respect to all the beds which can not be protected by barriers. The star-fishes may be removed from the beds or from the surrounding areas as they approach the beds, the latter being preferable. While the question of clearing the Sound of all star-fishes is absurdly preposterous, still, if it can be found that they congregate together at certain seasons in the manner described by the fishermen, and the places to which they resort can be determined, a thorough warfare upon them at such seasons may possibly result in reducing their numbers in the oyster districts to a great extent. In respect to the general question of capturing star-fishes, the principal object will be to determine the cheapest and most efficacious methods of taking them. The following are suggested, namely:

Dredges: The oyster-dredge is now used for this purpose, but it is heavy and covers only a relatively narrow area at each haul. The naturalist's dredge is lighter, but otherwise not superior. Examine the star-fish dredge devised at New Haven.

Beam-trawl: Covers a wide field, dependent upon the length of the beam, but the net is easily torn on rough bottom. The lower side of the net might be constructed of iron rings linked together, as in the oyster-dredge. Examine star-fish attachment devised by Lieutenant Platt.

Tangles: They have many advantages so far as the capture of star-fishes is concerned, but are difficult to clean, and might not do thorough work.

Baited traps: As explained above.

Oyster-tongs: For shallow water.

Revolving brushes: A hypothetical suggestion.

(19) *Clearing the oyster beds of other enemies than star-fishes.*—Winkles could be captured by dredges, beam-trawls, etc.

Drills: Probably do not inflict sufficient injury in deep water to merit special attention there, and in such places could probably only be captured by actually taking up the oysters themselves. No method of capturing them in shallow water has been suggested.

Worm-tube growths: If they accumulate in sufficient quantity to damage the beds, would probably necessitate the temporary removal of all oysters on the bed.

PROGRAM FOR THE FIELD WORK OF 1890.

(1) *Determining the character, condition, etc., of the natural bottom of Long Island Sound (i. e., bottom undisturbed by oyster industry).*—Lines of dredgings will be run across Long Island Sound at eight different places, as follows, the stations on the same to be from half a mile to 1 mile apart, namely: From Hen and Chickens, N. Y., to Prospect Point, L. I.; from Manursing Island, N. Y., to Matinick Point, L. I.; through Darien district, Conn., to Long Island; through Fairfield district, Conn., to Long Island; through Milford district, Conn., to Long Island; through Bradford district, Conn., to Long Island; through Clinton district, Conn., to Long Island; through East Lynne, Conn., to Long Island.

As the principal object of this inquiry will be to determine the character, and condition of the natural bottom for purposes of comparison with the oyster territory, the dredge and rake dredge chiefly should be used, the latter more especially on muddy bottoms where there is a prospect of finding a substratum of sand. Samples of fine material from the bottom, if required for further examination, should be preserved in alcohol. The fauna and flora should be determined, and a fair number of specimens may be saved as records of the work or for future identification. Temperature and density observations should be taken at the surface and bottom. It is preferable to make a microscopic examination of fine bottom material as soon as it is obtained. If

starfishes are found, the beam trawl may be used over a wider area to ascertain their distribution and abundance.

It is estimated that about eighteen days will be required to complete these lines if the work was carried on continuously.

(2) *General investigation of the off-shore oyster grounds and adjacent territory.*—It is proposed to conduct this work by running lines of observing stations due north and south, or off and on shore, half a mile apart, the stations on these lines also to be half a mile apart, unless it becomes expedient to increase or lessen the distance between them. The lines should extend as near to the shore as it is possible to work conveniently with the *Fish Hawk* and should reach to the outer limit of each oyster district.

The work will begin in the Stratford district, and be carried east and west from there, as far as time and circumstances will permit. It will be preferable to cover one entire district before beginning upon a second, but this may not be possible, in view of the fact that the physical and chemical inquiries must be carried on conjointly with the other work. Observations should relate to the unoccupied ground as well as to that now utilized for oyster beds. It is suggested that the investigation be carried first to the eastward of Stratford district, in preference to moving westward from the same, as the greatest amount of damage from star-fishes and other causes has been reported from the Stratford and New Haven regions.

A similar survey should be made of Guilford or Madison district, east of New Haven, as the artificial beds in both of these districts are probably farther removed from sources of pollution than any others of considerable extent in Long Island Sound. The object of the examinations of one of these districts will be to obtain data for comparison with that derived from the inquiry farther west.

It will also be expedient to examine with equal care some of the oyster areas of the New York side of the sound, preferably the large natural ground off Hempstead Bay and the artificial ground off Lloyd's Neck.

Having gone over one or more of the districts in the detailed manner first described above, it may become advisable to expedite the work in others in order to cover as large an area as possible before the close of the season. This question should be left to the discretion of the person in charge of the inquiry.

Over the oyster grounds it may be necessary to rely chiefly upon the dredge for examining the bottom, but, if the oystermen will permit, the beam trawl should be employed freely there as well as upon the undesignated grounds. The discovery of star-fishes in abundance should be followed by a thorough study of the surrounding bottom.

It is estimated that the thorough examination of each district would occupy from 5 to 15 days.

(3) *The investigation of the shallow waters and the shores.*—This inquiry will relate (1) to the natural beds close along shore and to all the waters in such localities which are suited to oyster planting; (2) to the adaptation of the shore itself to the proposed system of natural oyster culture by means of ponds and sluice-ways.

The investigation can be carried on by means of a steam-launch while the steamer is working in the neighboring region. It may be best to begin in the Stratford district, where there is a large area of natural oyster territory, and carry the work thence east and west, but advantage should be taken of every opportunity to examine the shores in all parts of the sound.

It is possible that there will not be a sufficient number of persons on board the steamer qualified to pass upon the work, to conduct both the steamer and the shore investigations at the same time, in which case the latter should always be subordinate to the former.

(4) *The physical inquiry by the Coast and Geodetic Survey.*—The general work of the steamer will be so regulated as to enable this branch of inquiry to be carried on continuously. It will be possible in most instances to make the current observations from the two launches which will accompany the steamer, thus leaving the steamer free to engage in the dredging and other work laid out for her.

(5) *The chemical inquiry.*—This inquiry can be conducted in connection with the regular work of the steamer, but in case the former advances more rapidly than the latter, the steamer's movements should be regulated, so far as possible, to permit of their being carried on without interruption, as the chemical investigation will probably not occupy more than from four to six weeks at sea.

As directly affecting the subject of the oyster grounds, this inquiry should chiefly be limited to the region between New Haven and New York and to the northern side of the sound except at the extreme west. A few observations should be made, however, in the eastern part of the sound, in order to obtain data for comparison.

For determining the origin of any pollution detected, observations should be directed towards the dumping grounds and towards the channels leading from New Haven, Bridgeport, South Norwalk, and other large towns.

If no harmful amount of pollution is discovered between New Haven and New York,

it may be considered that the inquiry is conclusive as to the oyster beds in Long Island Sound.

(5) *Information to be obtained of the fishermen.*—A set of questions has been prepared with the view of obtaining from intelligent fishermen and others such information as can not be secured by direct observation. The questions will be put to the fishermen and their answer recorded by some member of the party. It is not considered judicious, in view of past experiences, to request written answers from fishermen generally.

[The instructions for the oyster investigations during the season of 1888 and 1889 were of the same character but less comprehensive in their scope.]

INSTRUCTIONS TO SCHOONER GRAMPUS.

WASHINGTON, D. C., February 2, 1889.

DEAR SIR: As soon as the necessary arrangements have been completed you will begin a careful investigation of the red snapper and grouper grounds, lying to the westward of the coast of Florida, between the Tortugas Islands and Cape San Blas, Florida.

These grounds begin near the coast and extend outward to about the 50 fathom line, over nearly the entire distance between the northern and southern points above mentioned. The bottom varies considerably in different parts of this area, in some places being rich and affording good fishing, while in others it is poor and devoid of much life. The inshore portions of this ground are more or less well known to the fisherman, and do not require examination at the present time.

The area marked out for your investigations this winter and spring is comprised between the depths of about 15 and 50 fathoms, beginning about 20 miles north of the Tortugas Islands and extending to within about 20 or 30 miles of Cape San Blas. You will begin the investigations at the south and carry them thence northward to such extent as the time and weather will permit.

The manner of conducting the work will be to run lines of dredging and fishing stations across the bank in an east and west direction, or practically parallel with the lines of latitude, and at intervals of about 10 miles apart. Along these lines you should make continuous trials for fish, especially the red-snapper and grouper, and, at intervals of about 10 miles, the dredge should be hauled upon the bottom, and its contents preserved for future examination. In trying for fish it will probably be best to adopt the methods generally followed by the red-snapper fishermen of the region, as explained in the report of the cruise of the steamer *Albatross*, by Capt. J. W. Collins.

If an opportunity occurs, you will also consult on this subject with Capt. D. E. Collins and with the Gulf fisherman.

Mark each line of exploration on a chart, and indicate on the same the position of each dredging station and of each trial for fish when good results are obtained. Record all the facts regarding such dredging and fishing stations which are called for, and in addition such others which you may consider sufficiently important in the printed record books, of which copies will be sent you by mail. Dredging stations should be indicated by numbers beginning with No. 5050. Fishing trials worthy of record should be designated by numbers beginning with No. 1, and an account of the same may be kept in the printed record books but separately from the dredging record.

A daily record should also be kept of all the fishing trials made during each day in order to locate the poor as well as the good grounds for fish. I inclose a page, torn from the printed record book, with a few notes of explanations made upon it. The density and temperature observations should be made with great care. The former at least should be intrusted to Mr. Kendall, the naturalist, who will be given special instructions respecting the manner of making the observations before he leaves Washington.

It will not be expedient to attempt to take or save large quantities of fish. The main object of your investigations will be to ascertain the presence and relative abundance of the various economic species in the different parts of the area marked out for your exploration in order that the localities best suited for fishing may be accurately determined.

Rare and unknown species of fish should be preserved in alcohol, and also the contents of the several dredge hauls; but special instructions in this matter will be given Mr. Kendall. Weigh and measure the length of all the red-snappers and groupers taken at each trial, and having determined the average weight and size of each species at each haul, make a record of the same in the record book.

The same may be done with respect to other economic species, if the time will permit. Examine the contents of the stomachs of the red-snappers and groupers and

preserve the same in alcohol, each species separately, unless the names of the species found in the stomachs can be determined on board the *Grampus*.

In order to insure as much accuracy as possible in your work with respect to the dredging and fishing stations you will probably find it to your advantage to anchor on the ground when the day's work is done, providing the conditions of the weather will permit. By so doing you will be able to get under way in the morning with a certainty of making your starting point precisely where you left off work the night before.

The conduct of the work must be left largely to your discretion, and you must also decide whether, in case of threatening weather, it will be to the advantage of the work, so far as accuracy and general results are concerned, for you to make a harbor or remain at sea.

Whenever you arrive in port where mail can be sent you will inform me of the general progress of your work since last leaving port. You will also before leaving port instruct the postmaster to forward to you at the next station any mail received after your departure.

Instructions for the trip to Campeache Bank will be sent you later.

Inclosed you will find a tracing of the grounds designated for your investigation, the inner and outer edges of the same being indicated by red lines.

Very respectfully,

M. McDONALD,
Commissioner.

Capt. A. C. ADAMS,
Commanding Fish Commission Schooner *Grampus*.

Dr. JAMES A. HENSHALL,
Washington, D. C.:

DEAR SIR: You are hereby assigned to the schooner *Grampus* as senior naturalist during her investigations in the Gulf of Mexico, which will continue about three months. You will proceed as soon as possible to Key West, where she is now awaiting instructions, and report your arrival to Capt. A. C. Adams, her commanding officer.

You are authorized to begin at once the investigations of the coast waters of Florida between Biscayne Bay and Cedar Keys, including the fresh-water streams, lagoons, and ponds in the neighborhood of the coast and the southern part of the Everglades, should it be found practicable to enter them from any part of the coast along which your researches will extend. The principal object of your investigations will be to collect and study the fishes of this region and develop its fishery resources. This work should also extend to the marine invertebrates, with special reference to the useful species of crustaceans, sponges, etc. It will be very desirable to ascertain the habits, abundance, and distribution of as many forms as possible, and particularly of those species which may be of economic importance as food, bait, or otherwise.

You will also make as full observations as you can on the methods and statistics of the fisheries between Biscayne Bay and Charlotte Harbor, as this region will not be visited by Capt. D. E. Collins.

After the completion of your coast work you will return to the *Grampus* and assist in the off-shore investigations.

Instructions to Captain Adams direct him to supply you with the seine-boat, fully equipped; one dory, and two men, one of whom shall be able to act as cook. He will also furnish you with all the alcohol, tanks, jars, fishing-tackle, guns, etc., necessary to your work.

Very truly, yours,

M. McDONALD,
Commissioner

WASHINGTON, D. C., July 19, 1889

DEAR SIR: As soon as all the necessary arrangements on board the *Grampus* have been completed and she is prepared for sea service, you will proceed to carry on the physical and biological investigation off the coast in accordance with the plans already agreed upon. For this purpose, Capt. A. C. Adams, commanding the schooner *Grampus*, has been instructed to place that vessel under your orders when the work of refitting has been finished. Captain Adams is responsible for the safety of the vessel, and you will yield to his judgment in all cases where this question arises. A copy of his orders

is herewith inclosed. It is expected that a brief statement of your experiences and results will be transmitted to the Commissioner each time that you arrive in port.

Very respectfully,

M. McDONALD,
Commissioner.

Prof. WILLIAM LIBBEY, Jr.,
U. S. Fish Commission, Wood's Holl, Mass.

WASHINGTON, D. C., July 19, 1889.

DEAR SIR: After the arrangements now in progress on board the schooner *Grampus* have been completed and she is made ready for sea service you will hold yourself subject to the orders of Prof. William Libbey, jr., in carrying on the investigations along the coast, with which he has been intrusted by the Commissioner. You will, however, be held responsible, as heretofore, for the safety of the vessel and the crew, and have full authority to exercise your own judgment in relation to the same.

You will notify this office of your movements by telegraph whenever you arrive at or leave port. A copy of the orders to Professor Libbey are herewith inclosed.

Very respectfully,

M. McDONALD,
Commissioner.

Capt. A. C. ADAMS,
Commanding Fish Commission Schooner *Grampus*, Wood's Holl, Mass.

[The plans for the work of the schooner *Grampus* on the mackerel grounds south of New England and New York during the summer of 1889 were arranged by personal conference between the Commissioner and Professor Libbey.]

INQUIRY RESPECTING INTERIOR WATERS—LAKES AND RIVERS.

INQUIRY REGARDING INTERIOR WATERS.

The plans for the investigation of interior waters under the direction of Dr. David S. Jordan have been arranged chiefly by personal conference between him and the Commissioner, beginning in May, 1888, when, at the meeting of the American Fisheries Society at Detroit, Mich., the subject was fully discussed in the presence of the fish commissioners of several States, who advised that the subject be taken up without delay.

WASHINGTON, D. C., June 3, 1889.

DEAR SIR: You are hereby charged with the investigation during the summer of 1889 of the salmon rivers of Alaska, authorized by the following act of Congress, approved March 2, 1889:

That the Commissioner of Fish and Fisheries is hereby empowered and directed to institute an investigation into the habits, abundance, and distribution of the salmon of Alaska, as well as the present conditions and methods of the fisheries, with a view of recommending to Congress such additional legislation as may be necessary to prevent the impairment or exhaustion of these valuable fisheries and placing them under regular and permanent conditions of production.

Your party will consist, beside yourself, of the following-named persons: Mr. Livingston Stone, Capt. E. P. Herendeen, and Mr. Robert Lewis.

Instructions for the conduct of the work are herewith enclosed. You will arrange to leave San Francisco at the earliest date possible, and will proceed directly to the island of Kadiak, where your explorations will begin.

As you will have only a comparatively short season during which to carry on these investigations, it will be necessary to limit your operations to a few regions, of which Kadiak Island, Afognak Island, Cook's Inlet, and Bristol Bay are the most important. They should be visited in the order named, unless, after your arrival at Kadiak, you should find that the salmon fishery interests of Bristol Bay have greater need of attention than those of Cook's Inlet, in which case the Bristol Bay region should be taken in hand next after Kadiak and Afognak. This is, however, on the supposition that you will not have the time to visit all of the regions.

You will pay most attention to those rivers in the districts mentioned where the fishery is now being prosecuted with the greatest activity, and also those which, from their location and the abundance of salmon, are likely to attract the canning interests at an early day. Upon your arrival at Saint Paul, Kadiak, you will

probably obtain the information necessary to enable you to map out the course of your explorations.

It is on the short rivers, and especially those on Kadiak and Afognak Islands, as well as those on the adjacent coast of the peninsula, that the greatest fishery abuses are said to exist, and the dangers from injudicious fishing are most imminent. This class of rivers should, therefore, be carefully studied, and you will also seek to locate all the prominent salmon rivers in each district, ascertaining their chief characteristics, even though you may be able to do this, in many cases, in only a superficial way.

Your observations should all be made with a view to their bearing upon the practical question, as to how the salmon interests can best be protected, and to presenting to Congress a clear and succinct report upon the entire subject.

Three subjects are presented by the investigations in question, namely: First, the natural history of the salmon and the physical characteristics of their environment, in connection with which the river fishes generally may be studied; second, the conditions, methods, and statistics of the salmon fisheries; third, the artificial propagation of the salmon in Alaskan rivers.

Mr. Stone has been detailed to accompany you on account of his extensive knowledge respecting salmon culture on the Pacific coast. He should be given special charge of that branch of the work, but he will undoubtedly be able to assist you in the other subjects. Otherwise you will apportion the work among your assistants in such manner, as seems best.

The duration of your stay in Alaska will be determined by the length of the season suitable for field investigations. A letter has been addressed to the Alaska Commercial Company, requesting them to furnish you and your party with transportation to and from Alaska and to grant you the customary facilities at their stations. You will call at the office of the company immediately upon your arrival in San Francisco and ascertain what arrangements can be made with them.

Should the opportunities occur for sending mail home, you will inform me from time to time of the progress of your work.

Very respectfully,

M. McDONALD,
Commissioner.

DR. TARLETON H. BEAN,
Ichthyologist, U. S. Fish Commission.

Instructions for the conduct of the investigations of the salmon rivers of Alaska, authorized by the act of Congress approved March 2, 1889.

THE NATURAL HISTORY OF THE SALMON AND THE PHYSICAL CHARACTERISTICS OF THEIR ENVIRONMENT.

Physical characteristics of the rivers, etc.—In order to study the natural history of the salmon, it will be necessary to obtain some knowledge of the character and conditions of their environment, and to this end the rivers in which they occur should be carefully investigated. No accurate maps exist of any of the Alaskan rivers. You will be supplied with a copy of that part of Captain Tanner's recent chart of Alaska, which covers the regions you will visit. On this the rivers have been plotted in accordance with the best information obtainable. You will seek to correct these plottings by such observations as you are able to make. Your observations with respect to this subject should also relate to the following matters:

The course, length, width, and depth of the river. Contour and composition of the bottom. Character and composition of the shores and adjacent land. Character of the source, whether springs, lakes, snow, etc. Rate of descent, force of current, etc. Number, position, and character of the branches, and their influence on the main stream. Are any lakes connected with the river, and what is their character and their relations to the river? Character of the mouth of the river and its relations to the sea. Influence of the sea upon the water in the river. How far up do the tides extend, and how far does the salt-water reach? At what point does the fresh water begin? Clearness of the water. Temperature of the water at successive points along the river, taken both at the surface and at the bottom. Character, location, and permanence of all obstructions, natural and artificial. To what extent, if any, does the river freeze over in winter? Relations of one river to another. The temperature of the air should be observed and recorded several times each day at stated periods and also the general character of the weather from day to day, and, if possible, its influence upon the movements of the salmon. Photographs should be taken wherever possible, to illustrate the character of the rivers and of their surroundings.

Natural history of the salmon and other fishes.—Your observations in natural history should be directed specially toward the species of salmon which are of economic value. You will, however, make as extensive collections as possible of all the fishes inhabiting the rivers which you visit, and also of the aquatic invertebrates and plants, should you find it convenient to do so. With respect to the plants, it may be said that it will not be important to collect other species than those which may serve as food for fishes, or which are characteristic of the rivers and should be discussed in connection with them. The number of specimens of each species of fish which should be preserved in alcohol for future study is left entirely to your discretion.

These collections will serve as the basis of a comprehensive check list of the river fishes; but it is even more important to obtain materials for the preparation of a report giving the names, the relative abundance, and the relative importance of the different species of food-fishes, including, of course, the salmon. In this should be specified the edible qualities and average size of the several species of salmon found in the regions which you visit, the names of the species chiefly used at the canneries, and the value of the other species (not now so used) for canning purposes.

Respecting the salmon, it is most important to obtain as many observations as possible concerning their habits, and especially their migratory and spawning habits, as bearing directly upon the inquiries with which the Commission has been charged by Congress. Under this heading special attention should be given to the following topics:

At what time do the salmon begin to enter the rivers, and for how long a period do they continue to enter? At what time do they begin to leave the rivers, and for how long a period does this seaward migration continue? What are their movements and other habits after entering the rivers? How far up the river do they ascend? At what places, during what seasons, and for how long a period do they spawn? Are they ever observed in salt water off the mouths of the rivers? In what abundance, and at what seasons? How far from shore? Would it be profitable to fish for them in such places? Ascertain, if possible, what, if any, decrease has occurred in the supply, and the cause of the same. Has there been a willful or injudicious destruction of the fish, as claimed in the reports made to Congress, and in what manner has this occurred? Has the decrease occurred among all the commoner species of salmon, or has it been limited to the red-fleshed species, which appear to be the only ones that are now canned? The above questions should be answered separately for each species, should they differ much in their habits.

THE METHODS, CONDITIONS, AND STATISTICS OF THE SALMON FISHERIES.

Appliances and methods.—It is desirable to ascertain approximately the number of fishing vessels, boats, kyaks, etc., employed at each locality or at each of the salmon stations visited; but it is not necessary that they should be described in detail. The different kinds of apparatus in use for taking the fish should be ascertained, and the number and size of each mentioned; but, excepting where new forms of appliances have been introduced, it will not be essential to discuss them at length. In the case of fixed appliances, however, it is expedient to learn the date of their establishment, their cost, etc. The methods of using these appliances should be described, except where the same is already matter of record.

Products of the fisheries.—Under this head, data should be obtained respecting the yield of the fisheries, and the history and development of any of the important fisheries or manufacturing enterprises that have recently been established. The question of the increase or decrease in abundance of each of the commercial species of salmon should also be considered, and the influence exerted by the methods of fishing in vogue.

Preparation of fishery products.—It is desirable to secure as much information as possible respecting the preservation and preparation of all fishery products, especially in cases where new methods have recently been introduced. When these methods are already well known they need not be described in detail, but the manner of curing should be specified in each case, whether pickling, kench-curing, smoking, canning, etc. New and improved forms of apparatus used in the preparation of fishery products should be fully described, and drawings or photographs of the same should be made where practicable.

Transportation and markets.—Special attention should be paid to the question of markets and of methods of transportation, and as complete information as possible should be obtained respecting these subjects. Under this head belong the questions regarding the dispositions of the catch, the quantities of fish used locally, and the wholesale and retail prices.

Financial organization.—All questions of wages, shares, ownership of boats, etc., should be considered, and the cost of plants, such as factories, etc., should be ascertained. It is also important to obtain as much information as possible respecting the

value of vessels, boats, apparatus fish-houses, the amount of money invested, etc., and the amount and value of the catch during the present and past years.

The fishermen, etc.—It is desirable to ascertain the number of white and of native fishermen in the places visited, and also the effect on the native population of the establishment of canneries and other fishery enterprises.

THE ARTIFICIAL PROPAGATION OF THE SALMON IN ALASKAN RIVERS.

The chief points in the natural history of the salmon which it is essential to determine before undertaking their artificial propagation have been covered in the first section of these instructions. Should ripe fish be obtained at any time by your party, it will be expedient, however, to ascertain the number and size of the eggs common to each species, their rate of development, and such other facts as might aid in determining the methods of hatching best suited to the species.

One of the most important inquiries respecting this subject, and one which should receive careful attention, is that relative to the establishment of hatching stations. A constant outlook should be kept with the view of determining the more eligible sites for hatching work, always bearing in mind the qualifications required for such purposes, among which the following are essential:

The presence close at hand of large bodies of salmon during the breeding season. The fitness of the shores for the erection of buildings, for the penning of salmon, and for other necessary purposes; the possibility of obtaining an abundant supply of water by gravity means, and from a source near the station; proximity to a settlement or fishing station, not too remote from a shipping port.

You will also ascertain the nearest point at which building materials can be obtained and the general cost of the same.

MARSHALL McDONALD,
Commissioner.

By the CHAIRMAN:

Q. When the organization was made by Mr. McDonald, were the parties who were assigned to duty in your department largely new men who were introduced into the service, or were they persons who had grown up in the service?—A. In reply to that I would state that there were at that time and have been at all times very few persons as permanent employes in scientific inquiry; that the same volunteer assistants were continued——

Q. I mean the regular force, under pay. I did not speak of the volunteers.—A. The office did not exist before that time. One man was transferred from another office; two clerks came in as new men.

Q. Who were they?—A. H. S. Hinrichs and Frank McCormick.

Q. Is he a relative of Mr. McDonald's wife?—A. He is a relative of Commissioner McDonald's wife.

Q. Is he a competent man?—A. He is a thoroughly competent man for the work on which he has been employed. He had experience in type-writing before he came into my office, and that is what he was employed for.

Q. What was his compensation?—A. His compensation when he entered the commission was \$40 a month. That was increased on April 1, 1889, to \$50.

Q. That is his present pay?—A. It is his present pay.

Q. Do you know of any other relatives of Commissioner McDonald whom he has appointed? There is a Mr. Lewis, is there not?—A. I understand there are two Lewises—R. E. Lewis and—I have forgotten the initials of the other—who are distantly connected with Mrs. McDonald. That I simply know by hearsay. I know R. E. Lewis slightly.

Q. Do you know whether one of the Lewises was in the employ of the commission before Colonel McDonald became commissioner?—A. I know that he was.

Q. The other has been appointed by Commissioner McDonald?—A. The other has been appointed since the administration of Commissioner McDonald. I have an idea that he was temporarily employed before.

Q. Do you know anything about his efficiency ; whether or not he is a good man ?—A. I understand from those under whom he has worked that he is. He has not worked under me.

Q. What is the method pursued as to the payment of clerks and others employed in your department ?—A. No expenditures are made on account of the appropriation which is assigned to me for this purpose without my certification of the vouchers.

Q. Then the vouchers go to the commissioner ?—A. They go to the commissioner.

Q. And he approves them ?—A. First of all I make out requisitions for everything that is purchased for my department, or for all labor for it, except in a few cases where the field work demands that the person in charge of that work should make his requisition and get his material at once ; but his requisition then comes to me. Then the bills when they are made out come to me first. I indicate whether they are correct or not. By that I mean the bill made out by the parties of whom the goods were purchased. I certify on them whether the bill is correct. If it is not correct it goes back. Then when the bill goes to the disbursing agent he makes out the vouchers. They come back to me first then again for certification. That is, they never go to the person furnishing the supplies until they have been certified to as correct by the one authorizing the purchase or by the one making the purchase. They are then signed by that party, and sent back to the disbursing agent, who hands them in to the commissioner for his approval ; that is, the last act is the approval. The former acts are merely certifications or signing the receipts.

Q. After approval by the commission they are paid ?—A. After approval by the commission they are paid.

Q. In regard to your own department—do you think all purchases are made carefully and that everything is purchased at reasonable figures ?—A. Yes, sir ; we are careful in getting bids wherever we can do so and wherever it is required. Of course, in small purchases it is a waste of time and it is a thing which involves a few dollars ; but for large purchases bids are always requested from as many persons as possible, and the lowest bidder gets the work.

Q. You examine the bids ?—A. Yes, sir. I will state here that in my division every item of expense passes through my own hands personally ; that is to say, it is not left to the discretion of any clerk.

By Senator BLODGETT :

Q. Do you act independently of the commissioner in making purchases ?—A. No, sir. A requisition is first made out ; this requisition requests the goods or the services for a certain purpose, and is signed by the one needing them ; that goes to the disbursing agent, who ascertains whether the requisition is an appropriate one, whether it has been requested on the proper appropriation, whether it is justifiable in every way ; then he puts his initials on it ; then it goes to the commissioner, who signs it, approves it, and then it goes back to this person, and it is his authority for making the purchase. No purchases are made except upon a requisition signed by the commissioner, except in a few instances where emergencies demand it and for which there are strict regulations.

By the CHAIRMAN :

Q. Do you know whether the same regulations exist in the other departments ?—A. It is not a regulation of my division. It is a regulation of the entire Commission. It is a general regulation.

In the case of the steamer *Albatross*, detailed requisitions are not required of the captain, because it would simply delay the work. An allotment of money is made to her, within which the captain is obliged to keep.

I desire to place upon record the opinions of certain scientific men, who are competent to judge of the conduct of work during the past two years. I have here the sworn statements of two such persons, who are absent from the country, and desire to have them form part of the testimony :

QUEBEC, CANADA, June 30, 1890.

To whom it may concern :

I am informed that the management of the United States Fish Commission is now under examination, and as I have had many opportunities to study the manner in which scientific research has been prosecuted by the Commission under the late Professor Baird and under Prof. Marshall McDonald, as well as by other organizations of a similar character, I beg leave to express my high estimation of the wisdom and breadth of view and the fidelity to the interests of the public which have characterized the scientific investigations which have been carried on by the Commission under Professor McDonald's direction.

My qualifications for forming and expressing an opinion upon this subject are as follows: In 1878 I was employed as a naturalist to carry on scientific researches and experiments in oyster propagation under the Maryland State Fish Commission. During the years 1883 and 1884 I was chairman of the Maryland State Oyster Commission, and was employed for the whole of this period in studying the oyster industry, from the practical side as well as in its scientific aspects. During the years 1886 and 1887 I was employed by the British Government to assist in contributing to the scientific results of the cruise of H. M. S. *Challenger*, and the experience and training which I have thus obtained have fitted me for estimating the practical value of scientific researches. My position as a professor in the biological laboratory of the Johns Hopkins University, in Baltimore, and as a member of the National Academy of Sciences, has given me opportunities to become thoroughly acquainted with the scientific work of the Commission.

As a bureau for applying science to practical ends its aim should be the attainment of practical results rather than the advancement of science, and the explorations and investigations and researches which it has undertaken under Professor McDonald's direction have been carefully and wisely planned for the purpose of aiding its practical work, either by perfecting and improving its appliances and methods, or by extending its usefulness into new fields, or by throwing light on practical problems and by removing difficulties, or else by increasing our knowledge of the conditions which are favorable or prejudicial to our fishing interests. Most of this work necessarily relates to the life of the ocean. The ocean is the home of animal life, and all the life on the land is as nothing when compared with that under the water. The amount of food for man which the ocean might be made to furnish is unlimited and inexhaustible, and all naturalists know that our marine food resources admit of sufficient development to supply abundant food for all the people which the country will ever contain.

Even now sea-food is very cheap, although our ignorance of marine life, and of the conditions which are favorable to its increase is profound.

The chief aim of the Fish Commission should therefore be to discover how to make this source of wealth available, and to develop and improve it for the use of our people. From the time of its establishment it has wisely devoted much attention to the study of marine life, but the researches in marine biology which it has initiated, during the past three years, under Professor McDonald's direction are very much more intimately and directly related to its practical duties than were some of those with which it was concerned at an earlier date.

During the first years of the Commission the exploration of the unknown regions of the ocean and the collection of museum specimens to exhibit the characteristics of marine life, was a very prominent part of its work, and as a preliminary step to more thorough investigation, this was not only perfectly proper, but highly important and useful, as is well shown by the fact that while our Government was the first to undertake the exhaustive scientific exploration of the ocean, its lead has been followed by most of the maritime nations of Europe. England, France, and Italy especially have entered upon the work with great energy, and have sent out costly and well-equipped expeditions for marine exploration. It is worthy of remark that most of the machinery and apparatus which these foreign countries have employed has been modeled after that which has been devised and used by our Fish Commission.

Some of the collections which our Commission has obtained in past years were

studied by specialists, and the results which were published, are valuable contributions to science and important additions to our knowledge of our marine resources. Other collections, however, were stored away for future study, and although many American naturalists would have been glad to investigate them and to prepare reports upon them, this was not permitted, and they have been kept until the results which they might have yielded have been anticipated by the researches which have been instituted in foreign countries; while, in the meantime, biological research has made such great advances that these collections are now of little value for investigation by modern methods.

As soon as Professor McDonald became Commissioner, the collection of natural history specimens was made incidental to the proper practical work of the Commission, but whenever it has been possible for the vessels of the Commission to gather specimens for scientific research without detriment to practical work this has been done and the material has been promptly assigned to specialists who have undertaken the work of studying it and of preparing reports upon the scientific results of their researches, without any expense to the Commission.

Professor McDonald has also introduced, under the immediate auspices of the Commission, scientific researches and experiments which have for their purpose the improvement of its methods and the extension of its field of usefulness, but the expense of these investigations has been strictly limited to the amount specifically appropriated for scientific inquiry. Scientific investigations have been employed to study such problems as the history of the injurious parasites of food-fishes, the influence of ocean currents and temperature on the distribution and multiplication of migratory fishes, the history of important marine animals, such as the sturgeon, the sea bass, and the lobster, the origin of the food supply of marine fishes, and the history of the animals which serve as food, the history of injurious marine animals, such as the star-fish and so on.

The method which has been pursued in these inquiries has been to employ, for a limited period, a scientific investigator who possesses especial qualifications for that particular work, and to give him every facility for gathering and studying his material according to the most improved modern methods and the economy and practical efficiency of this plan as compared with general miscellaneous collecting is so obvious as to require no comment.

By confining the attention of the scientific investigator to a specific problem the researches of the Commission have been made more directly and immediately tributary to its practical work, but at the same time that Professor McDonald has thus systematized and wisely directed the investigations of specialists he has also greatly increased their scientific value and has brought them abreast of the most advanced researches of the age in marine biology.

W. K. BROOKS,
*Assistant Professor of Animal Morphology
in the Johns Hopkins University, of Baltimore.*

CONSULATE OF THE UNITED STATES OF AMERICA FOR QUEBEC,
Quebec, Canada.

On this 2d day of July, 1890, before me the undersigned consul of the United States of America for Quebec, personally appeared Prof. W. K. Brooks known to me to be the person described in and who executed the foregoing instrument in writing, and acknowledged the same to be his act and deed, and declared that he had executed the same freely and voluntarily, to the uses, and for the purposes therein mentioned.

Given under my hand and the seal of this Consulate at Quebec, the day and year above written.

[SEAL.]

FREDERICK M. RYDER,
Consul of the United States of America.

Statement of David S. Jordan in regard to the work of Scientific Inquiry of the U. S. Fish Commission.

BLOOMINGTON, IND., June 13, 1890.

To whom it may concern:

Since the year 1876, I have been more or less closely connected with the United States Fish Commission as a volunteer assistant or as a consulting expert on matters pertaining to the classification, structure, habits, distribution or relations of fishes.

I have been especially interested in the exploration of river basins as a means of adding to our knowledge of fishes. At different times, in Professor Baird's administration, I received some aid in the work of the exploration of the waters of Indiana, Georgia, North Carolina, Florida, and other states. Most of the expenses of this work were however borne by myself and my assistants.

In 1880, means were furnished me for a comparatively thorough study of the shore fishes of California, Oregon and Washington, and in 1884, for an exploration of the waters of parts of Iowa, Missouri, Arkansas, Texas, Alabama and Tennessee. All these explorations in the aggregate covered but a small part of the United States, and while satisfactory so far as they went, they were far from complete.

It is manifest that before intelligent and effective work can be done in the introduction of new fishes into any region, and in the preservation of the native species, it is necessary to make such preliminary surveys.

It is necessary:

(1) To ascertain what our species of fishes are, their value, habits, and relations; the kind of waters in which they thrive, the food they need, their enemies, and their friends.

(2) To find the natural range of each species and the character of the barriers that limit it.

(3) To ascertain the general character of each river-basin in which the planting or preservation of fishes is contemplated; the temperature of the water, its fluctuation with seasons, and in general every fact which can have a bearing on the work of the Commission.

(4) To ascertain for each river-basin the species it now has; their relative abundance and value.

(5) Besides these directly practical ends, such explorations should furnish data which would aid us to fix more precisely the laws of animal distribution.

Without such information, the work of the Fish Commission in the fresh waters must be more or less blindly or wastefully done. The importance of securing it was fully appreciated by Professor Baird, but for one reason or another, not much was done under his administration.

When Mr. McDonald was appointed Commissioner of Fisheries, he recognized at once the necessity of this work, and his able assistant, Mr. Richard Rathbun, chief of the division of scientific inquiry, made arrangements at once for its prosecution. It has been attempted to do this work thoroughly and effectively, in such a manner that it will not need to be done again, and the means used has been through the organization of parties of naturalists as volunteer assistants, their bare expenses being paid, without salaries.

In the spring of 1888, I was asked by Mr. McDonald and Mr. Rathbun to take a general, although unofficial, oversight of this work, and I spent part of the summers of 1888 and of 1889 in field-work of this nature, assisted in both cases by students. The report on the work done in 1888 is now published, and the reports of 1890 are now in the hands of the printer.

In 1889 the following river-basins were explored more or less completely: Wabash, Holston, French Broad, Kanawha, Saluda, Catawba, Neuse, Cape Fear, Tar, James, Roanoke, Shenandoah, and the Dismal Swamp. An exploration of various lakes in southern Michigan was also made in co-operation with the Fish Commission of that State.

In 1890, the streams of Colorado, Utah, and the Yellowstone Park were explored under my personal direction. Other parties examined streams of Georgia, Southern Missouri, Arkansas, and Alabama.

From all these streams collections were obtained, not so much for the sake of the specimens as to make possible that degree of accurate comparison on which the value of this work depends. While most of these specimens ultimately find their way into the National Museum, their collection is not undertaken for museum purposes, but for the purpose of a better knowledge of American food fishes.

The results of the work of these two summers have been of great practical as well as scientific importance. The continuance and extension of this work seems to me an integral part of the duty of the United States Fish Commission.

In this regard as well as in others, in my judgment, the work of scientific inquiry has been more wisely and effectively prosecuted under the present Fish Commissioner than was the case during the administration of Professor Baird.

DAVID S. JORDAN,
President of the Indiana University.

Subscribed and sworn to before me, a notary public in and for the county of Monroe, in the State of Indiana, by David S. Jordan, president of the Indiana University, this 13th day of June, A. D. 1890.

[SEAL.]

J. H. LOUDEN.
Notary Public.

At 11 o'clock and 30 minutes p. m. the subcommittee adjourned until Monday, July 28, 1890, at 10 o'clock a. m.

WASHINGTON, D. C., *July 28, 1890.*

The subcommittee met at 10 o'clock a. m. pursuant to adjournment.
Present, Senator Stockbridge (chairman).

TESTIMONY OF MARSHALL M'DONALD—Continued.

MARSHALL MCDONALD, having resumed the stand, testified as follows:

The WITNESS. I have here the questions submitted to the committee by Mr. Blaisdell and my answers thereto.

REPLIES TO QUESTIONS SUBMITTED BY MR. BLAISDELL.

Question 1. What was your position in the Fish Commission under the late Prof. S. F. Baird?

Question 2. What was the amount of your salary at that time?

Answer. I held a number of positions under Professor Baird. At the time of his death I was chief of the Division of Distribution and received a salary of \$2,400 per annum. My official title did not, however, define my duties or responsibilities. I was practically in charge of the fish-cultural operations of the Fish Commission, propagation as well as distribution; was the superintendent of central station, Washington, D. C.; the director of the Wytheville station in Virginia, and had general control of all the stations, with the exception of Battery station and St. Jerome's, which were under the immediate direction of the Assistant Commissioner, and the Wood's Holl station, which was controlled directly by the Commissioner, Professor Baird. I prepared also the larger part of the correspondence of the Commissioner, relating directly or indirectly to fish culture. At the time of the death of Professor Baird I was in Colorado on a tour of inspection, looking to the establishment of new stations in the South and West, and the better organization and ordering of existing stations.

When Professor Goode succeeded Professor Baird as Commissioner of Fisheries, he formally constituted a division of fish culture, and I was appointed assistant in charge of the division with a salary of \$2,800 per annum.

Question 3. Who is in charge of the same division at this time in the Commission?

Question 4. Has the work of the division increased in the department of distribution since 1887?

Question 5. Is the work of this department performed in a satisfactory manner by the present head of the department?

Question 6. Do you not consider the methods used in the Division of Distribution to be carried out in a thorough business way, and have you not stated that you considered that Mr. Moore was a thorough practical and business man?

Question 7. Do not the records of the Commission show that more work has been performed than in the past?

Question 8. What salary does Mr. Moore receive?

Answer. Eighteen hundred dollars per annum.

Question 9. Is the salary paid Mr. Moore in just proportion to that paid by you to other departments of the Commission of less responsibility and work and results?

Questions from 3 to 9 have the same purport, viz, to show that Mr.

George H. H. Moore, now superintendent of distribution, is discharging duties for which the present Commissioner received \$2,400 per annum, and for which Mr. Moore receives but \$1,800 per annum.

Answer. The salary paid Mr. Moore is fully up to the measure of his responsibilities and duties. He is not chief of a division of distribution, such as was defined in a general way under Professor Baird's administration, nor has he the multiple duties and responsibilities that devolved upon the chief of the Division of Distribution then. He is what his official designation defines him to be, superintendent of distribution with his duties and responsibilities clearly set forth in his letter of assignment, a copy of which is herewith submitted.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., February 21, 1888.

GEORGE H. H. MOORE, *Messenger.*

DEAR SIR: You are hereby assigned to duty as superintendent of distribution, and will have immediate and responsible direction of all that relates to the service of distribution. All requisitions will be made through or by you; all original bills and vouchers for expenditures will be certified or approved by you, and you will be charged with the execution of all details of distribution in accordance with the lists furnished by the office of the division of fish culture or programme directed or approved by the Commissioner.

Respectfully,

M. McDONALD,
Commissioner.

True copy:

J. J. O'CONNOR,
Chief Clerk.

He is in immediate charge of the regulation of the car and messenger service of distribution. All applications for fish or eggs, all promises made in regard to stocking public waters, and all assignments made for this purpose, are after approval by the Commissioner, entered in the records of the office. From these records the lists of distribution are from time to time made up and submitted to the Commissioner. Upon the basis of these lists the general programme of distribution is arranged and incorporated in instructions, which are given by the Commissioner verbally or in writing to the superintendent of distribution, who is responsible for their proper execution. The salary of the superintendent of distribution has been fixed at \$1,800 after careful consideration. I do not deem any increase advisable. The office is of the same grade so far as responsibilities and qualifications are concerned, as is that of superintendent of a first-class hatching station, and receives the same compensation.

By the CHAIRMAN:

Q. What was Mr. George H. H. Moore's salary when he was captain of a car?—A. Twelve hundred dollars.

Q. What is his present salary?—A. Eighteen hundred dollars.

Q. That advance has been made under your administration?—A. Yes, sir.

Q. In consequence of his advanced position and increased duties and responsibilities?—A. Yes, sir.

Q. You consider his present salary as a suitable one for the position he holds?—A. Yes, sir; fully up to the measure of his responsibility.

Q. Is he a competent and faithful man in his position?—A. I have had no reason to think otherwise until recently. I may state this in regard to Mr. Moore. I think he has shown evidence of dissatisfaction with his position and of jealousy and antagonism to others in the Com-

mission, on account of their advancement or promotion, thinking, I presume, that it militated against his own advancement.

Q. But he discharges his duties faithfully?—A. Yes, sir; just as all do. I would discharge him if he did not.

MR. BLAISDELL'S QUESTIONS.

Question 10. Have you any relatives or any relatives of Mrs. McDonald on the rolls of the Commission?

Question 11. Will you state the names of any relatives of yourself or wife on the roll of the Commission, the salaries paid when appointed, their duties, length of time employed, kind of work done, and present salary?

Answer. I have no relative in the Commission or elsewhere in the Government service so far as I know. Having fourteen brothers and sisters living, all married and most of them with sons growing up and seeking positions in life, I have had abundant occasion as well as opportunity to place some of them in good positions had I been so inclined.

Mrs. McDonald has a single relative, a nephew, Mr. Frank McCormick, in the service of the Commission. He is employed as a typewriter and copyist in the division of scientific inquiry, under Mr. Rathbun, who has appeared before your committee already and testified as to the pay, duties, and qualifications of Mr. McCormick.

Mr. R. E. Lewis and Mr. C. C. Lewis, who have been named as relations, are not related either to Mrs. McDonald or myself. They are remote connections by marriage with Mrs. McDonald, so remote that even in Virginia we don't count such connections.

Mr. C. C. Lewis entered the messenger service November 1, 1886. This service was not then continuous. He was employed whenever active work was going on. The record of his service from the time of entering until January 13, 1890, is as follows:

Tenure of service.	Occupation.	Compensation.
		<i>Per month.</i>
November 1 to December 31, 1886	Messenger apprentice	\$45
January 8 to 24, 1887	do	45
February 1 to June 20, 1887	do	45
September 27, 1887, to January 15, 1888	Assistant messenger	60
April 23 to October 31, 1888	do	60
November 1, 1888, to March 15, 1889	do	75
April 25 to December 15, 1889	do	75
January 2 to 13, 1890	do	75

On January 13, 1890, he was transferred to Leadville Station to assist Mr. Robinson, the superintendent. His compensation was increased \$15 per month, to cover the increased cost of living, such increase being usual when such assignments are made.

Mr. R. E. Lewis is my own appointment. I desired to train up in my office a young man who could acquire general knowledge of the work. I selected Mr. Lewis because I knew him to be a young man of thorough integrity, industrious, and capable. I have not been disappointed in this estimate based on personal knowledge. He is rendering most efficient service on a meager salary of \$50 per month.

Question 12. Have you the letters sent you by Mr. E. M. Robinson from Colorado Station, showing why Mr. Bright was removed, and also why he requested the transfer of Mr. Lewis?

Answer. All of Mr. Robinson's letters are in our official files subject to the call of the committee. Those relating to Mr. Bright will be taken up specifically in connection with his appointment and discharge. As to Mr. Lewis, I have never received from Mr. Robinson a request for his transfer to another station. In one letter I believe he suggested that he did not think Mr. Lewis physically capable of standing the hardships and inclemency of weather.

Question 13. Why was Mr. Lewis transferred from the Colorado Station to the Wytheville Station?

Answer. Mr. Lewis has not been transferred to the Wytheville Station. He was ordered there from the Colorado Station in charge of a shipment of the native Rocky Mountain (black spotted) trout, which I have sent there for breeders. His services are being utilized there pending an inquiry as to the truth of the charges made against him by Mr. Bright.

Question 14. Was there ever in the history of the Commission under the late Professor Baird at Wytheville Station a position as superintendent at \$1,200 per annum, and an assistant superintendent at \$1,080 per year?

Answer. I believe not, nor is there now. Mr. Lewis, as stated above, is only temporarily at the Wytheville Station.

Question 15. Had Mr. C. C. Lewis ever had any experience as an expert at fish culture at the time he was sent to the Colorado Station.

16. Please give station and time of experience he had had as an expert in salmon hatching.

Mr. Lewis was not sent to the Colorado Station as a fish-cultural expert. He had previously been attached to the messenger service, and in this work had acquired a valuable experience in the handling and transfer of fish. The station was being developed in the most inclement season of winter. The work involved exposure and endurance, and was of a character such as to utilize the experience he had acquired in the transportation of fish in the messenger service. The assignment of Mr. Lewis to the Colorado Station was made in the exercise of the discretion vested in me by law as Commissioner of Fish and Fisheries, and with due regard to the best interests of the service. I hardly think it competent for a discharged employé, himself discharged for neglect of duty, incompetence, and insubordination, to call in question the action of the Commissioner in cases where the right and the responsibility of decision under the law necessarily vests in him and must be controlled by his judgment.

Question 17. Was there ever in the past history of the Commission such an office as inspector of stations?

Answer. No; nor was there such an office as superintendent of distribution. Both were made necessary by the increased economic work, and the necessity of better organization. The work of the Commission is comprised under four divisions, as follows: The division of general administration; the division of scientific inquiry; the division of fisheries; the division of fish-culture. The routine of the general administration is directed by the chief clerk. The immediate direction of the divisions of scientific inquiry and fisheries is in charge of assistants. The Commissioner has retained direct charge of the division of fish-culture, and for the proper administration of the work has appointed a superintendent of distribution and an inspector of stations. This organization is based upon his experience and knowledge of the work, and is necessary for its efficient conduct.

Colonel Gay was selected as Inspector of Stations, because I had per-

sonal knowledge of his qualifications as a fish-culturist, and was assured that he had the methodical business training and experience necessary for efficient discharge of the duties of Inspector. His instructions as contained in his letter of assignment to duty define plainly and fully his duties.

Copy of instructions is herewith submitted for the information of the committee:

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., July 3, 1888.

JOHN GAY, esq.,
*Inspector of Stations, U. S. Fish Commission,
Washington, D. C.*

DEAR SIR: The efficient discharge of the duties devolving upon you as inspector of stations of the U. S. Fish Commission requires that you shall make yourself thoroughly familiar with the affairs of each station of the Commission by careful study of the records of the stations, in the files of the office of the division of Fish Culture.

These files are placed immediately under your direction, and to them will be assigned, as received, all reports, letters, etc., relating to the stations; so that at any time all the data in regard to the work of the stations will be together and subject to your examination.

You will be called upon from time to time for reports on the condition of the work at the stations, and will be required to inspect the same from time to time as indicated by the Commissioner; making such recommendations as in your judgment seem proper with a view to the improvement of the efficiency of work at the stations. You are authorized to call upon the superintendents and personnel of the stations for information in regard to the same.

Very truly yours,

M. McDONALD,
Commissioner.

True copy.
J. J. O'CONNOR,
Chief Clerk.

Question 19. Has Mr. Gay any practical experience as an architect or builder of either buildings or machinery?

Answer. No; nor do his duties require such knowledge. He has common sense and business experience, which serve a useful purpose in the way of suggestion.

Question 20. Did he locate the Colorado station and the one at Put-in Bay, Lake Erie?

Answer. He did not locate either. He made the necessary preliminary investigations and inquiries. The definite location in both cases was made by the Commissioner, after careful personal examination of the ground.

Question 21. Did he alter the plans of the work at Lake Erie station?

Answer. No; all alterations were authorized and approved by the Commissioner upon his own responsibility and knowledge of the requirements of the stations. No alterations were made in the interest of the contractor. Some changes in details of plans and specifications were made necessary—owing to the fact that Mr. Blaisdell, the draughtsman employed in the office to make the drawings, proved to be ignorant of construction. The roof trusses, for example, were placed over the openings in some cases, and the trusses themselves were made more cumbersome and complex than necessary. All changes made were, however, duly authorized—and in all cases the Government interests protected.

Question 22. Did Mr. Gay locate the station at Gloucester, N. J.?

Question 23. Was this station located on Government or private property?

Question 24. What was the cost of fitting up this station?

Question 25. What rent is paid for the use of the property at Gloucester, N. J.?

Answer. The station at Gloucester, N. J., does not belong to the United States. It is the property of Mr. — Thompson, of Gloucester, N. J., who built it in accordance with plans furnished by the Commission, and furnishes the use of it to the Commission rent free for the period of five years, including right of water from the city mains.

It was a most liberal and public-spirited act. He has extensive fishery interests on the Delaware, and expects his compensation by reason of the improvement in the fisheries which will arise from the maintenance of a hatching station there. The cost of fitting up the station was about \$1,200. The equipment, however, is movable, and available for use elsewhere if desired. Heretofore the work on the Delaware has been done by the *Fish Hawk*, which can be engaged to better advantage in other work. A shore station was a necessity for the continuance of the work on the Delaware.

Question 26. Was there ever such a position as agent for the Fish Commission prior to your becoming Commissioner?

No; nor were there superintendents of Neosho station, Duluth station, Leadville station, Clackamas station, Fort Gaston station, Put-in Bay station. The stations have been established and put in operation since I became Commissioner.

Dr. Bartlett, designated as agent of the Fish Commission, is in fact superintendent of the collection and distribution of the native food fishes of the Mississippi Valley—a work which was begun tentatively two years ago, and which has proved to be one of the most productive and valuable works undertaken by the Commission. It is especially in the interest of the Mississippi Valley States, where it has the warmest recognition and appreciation. This work is so important that I have thought it best to give it independent organization and administration, and have placed it under the direction of Dr. Bartlett, who was the first, I believe, to inaugurate it, and to demonstrate its value. He receives a salary of \$1,800 per annum, and his necessary traveling expenses when engaged on official duty.

Question 27. Does he hold a position in the State of Illinois, in the Illinois State Fish Commission?

Answer. I am not sure; I believe he does.

Question 28. Does he receive a salary from the State any part of the year?

Answer. I do not know.

Question 29. Is it understood that Mr. Bartlett comes to Washington during the session of Congress to influence legislation in the interest of the Fish Commission?

Answer. Not that I know of. So far as I have knowledge, his visits here are under orders in the discharge of his duties, and have no other significance or object.

Question 30. By whose instructions was he recently called to Washington?

Answer. In response to the following telegram:

[Telegram.]

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., June 11, 1890.

S. P. BARTLETT, Quincy, Ill.:

Necessary to have personal conference with you in reference to summer's work. Report in Washington at early date.

M. McDONALD.

A true copy.

J. J. O'CONNOR,
Chief Clerk.

His expenses were paid by the Commission. I desired a conference with him in view of the proposed extension of the work of distributing the native fishes. About that time Mr. Atkins, superintendent of the Maine stations, was ordered here to confer in reference to the proposed improvements at the Maine stations. In both cases they were summoned here for reasons connected with the work and for no other.

Question 31. While here did he visit members of Congress or Senators to secure their influence for the defeat of the bill known as the Paddock bill for the transfer of the Fish Commission to the Department of Agriculture?

Answer. I can not say. Certainly not as the representative of the Commissioner or in any official capacity. Dr. Bartlett may be opposed to such a bill; those interested in the fisheries very generally are.

Question 32. Has Mr. Bartlett an interest in the McDonald Fishway Company?

Question 33. Please state the number of shares held by him, and the consideration he paid for the same.

These questions relate to matters entirely private and personal to Dr. Bartlett, and should be addressed to him if considered pertinent to this investigation by the committee. I may add in this connection that the McDonald Fishway Company is a corporation organized under the laws of Virginia, and holds exclusive control of all rights and franchises arising under patents granted to me for improvements in fishways. The invention so far as it is covered by patents was perfected prior to my having any connection with the Government service. The organization of the company was also, I believe, made prior to my accepting service under the Fish Commission. The stock, so far as I am informed, has no present or prospective value.

Question 34. Was there ever any understanding that, for the interest transferred to him, he was to use his influence in Illinois to secure the adoption of the McDonald fishway in Illinois and Michigan and and other Western States?

Answer. No. I have never made any transfer of interest of any kind or promise of consideration of any nature whatever to Dr. Bartlett with the understanding that he was to use his influence to secure the adoption of the McDonald fishway in Illinois, Michigan, and other Western States.

Question 35. Did he ever say to you that he was going to secure the passage of a compulsory law in the State of Illinois to compel owners of dams over the rivers of that State to construct such fishways as the fish commissioner of the State should prescribe?

Answer. I do not recall such a conversation, but it doubtless occurred. Such action on the part of the legislature would, in my judgment, be expedient and proper. Fishways in streams obstructed by dams are absolutely necessary to keep the streams stocked. The fish commissioners of a State are, from their position and presumed experience in such matters, best qualified to determine or approve the plans for any particular construction.

Question 36. Has he (Dr. Bartlett) been in the habit of making trips with the cars of the Fish Commission throughout the State of Illinois and other Western States for the purpose of distributing the local fishes of that State?

Answer. Certainly. It was his business to do so. He was and is in charge of the work of collecting and distributing the native food-fishes. The overflow ponds from which they are collected are in Illinois. Thence they are distributed by cars and messengers to the rivers, lakes, and

ponds of Ohio, Illinois, Michigan, Indiana, Missouri, Iowa, Kansas, and Nebraska. This work is under the immediate and responsible direction of Dr. Bartlett. Within the limits of it, and in pursuance of it, he goes where he finds it necessary—reporting regularly to the commissioner the progress and incidents of the work.

Question 37. Why is the State of Illinois selected for these especial favors? Are not the other States as much entitled to free distribution by the Government as the State of Illinois?

Answer. The State of Illinois is not selected for any special favors. The work there is carried on in pursuance of the general plan or policy of the Commission. The greater benefits of work in any section inure necessarily to the section in which the work is carried on. In Maine, for example, we have a group of salmon stations. The product of these stations goes largely to stock New England waters.

The marine work at Gloucester and Wood's Holl, Mass., is necessarily almost entirely in the interests of the coast fisheries of Maine, Massachusetts, and Rhode Island.

Of the product of the white-fish hatcheries at Duluth, Minn., Northville and Alpena, Mich., and on Lake Erie, the larger proportion, viz, from 60 to 75 per cent., goes to stock the waters of the States in which the work is carried on.

The same is true of the salmon hatcheries of the west coast at Fort Gaston, California, Baird, California, and Clackamas, Oregon. The fry produced at these stations are for stocking the Sacramento and Columbia Rivers, and the work is exclusively in the interests of California, Washington, and Oregon.

The same is true in reference to the shad hatcheries on the Potomac, the Susquehanna, and the Delaware. The product of these goes mainly to stock the waters of those sections in which the work is conducted.

The following questions submitted by Mr. Blaisdell, but doubtless formulated by others who are too cowardly to assume responsibility for them, but are base and mean enough to assail my personal and official character anonymously, all relate directly or by implication to the charge that I have used Government employés in doing work for my private use and advantage, and converted materials purchased at Government expense to such use and advantage.

I will first give the questions relating to this, and then cover the matter by one connected statement.

Question 49. At any time have there been plans of fish-ways or your patent water-filter made by the employés of the Fish Commission during Government time?

50. Have any of the employés of the Commission ever worked on models of fish-ways or water-filters during Government time?

51. Has the Government ever paid for any materials used in the construction of either fish-way or water-filters?

52. At any time have you approved or had made plans of fish-ways other than those for the Great Falls fish-way during Government time?

53. Did you have plans made for a fish-way at or near Bowling Green, Ky.?

54. By whom were such plans made?

55. Have you ever had other plans of fish-ways made by Government men in Government time?

56. Have any of the employés of the Fish Commission ever worked on models of a boat-way during Government time?

57. Has the Government ever paid for any lumber or materials used in such models or for fish-ways and your water-filter?

75. Did you ever have Mr. E. I. Rogers make plans, drawings or paintings of fish-ways, showing adaptation of your fish-way to different dams?

76. Were there ever any photographs made of such plans, drawings, or paintings by Mr. T. W. Smillie, of the National Museum?

77. Did you ever sign department requisitions for any work of this kind?

In reply, I respectfully submit that it has been the policy of the Commission from the beginning to give liberal encouragement to experimental investigations looking to the improvement of the methods and apparatus of fish-culture.

For years, under Professor Baird, I was engaged in the investigation of definite problems looking to the improvement of methods and apparatus of fish culture. The hatching jar now in general use here and abroad for hatching shad, whitefish, etc., and the tidal hatching-box now used for the hatching of the floating eggs of the marine species are the result of investigations undertaken by me with the authority and by direction and encouragement of Professor Baird.

These investigations required the aid of draughtsmen to design, and workmen to construct, the various tentative or experimental models and devices planned in the course of the investigations. Trained experts were also needed to conduct observations as to the working and to study the conditions of success or failure. The draughtsmen, the skilled workmen, the trained observers were all employed and paid by the Government, and the material required for the experimental constructions was provided at the expense of the Government.

No one, I presume, will question the wisdom of such expenditures, having for their object and resulting in the improvement of fish-cultural methods and apparatus.

Since I have been Commissioner the duties of the general administration have left me little time or opportunity for experimental investigations. I have, however, given some thought to the problem of securing clear water for our aquaria here in Washington, and investigations having this end primarily in view have after several years study and experiment resulted in the development of an automatic system of filtration, which doubtless will have value for general use. Anticipating the probability of such issue, I have been careful myself to pay for the material, patterns, castings, etc. None have been paid for by the Government. Some work in fitting up the models set up for study has been done by the machinists at the station, but these filters are now in actual use at the station, furnishing filtered water for drinking and for some of the aquaria.

So far from developing a patented invention at the Government expense, I have developed a valuable aid and adjunct to the Fish Commission work at my own expense.

Recently I have been engaged in the effort to apply the methods of retarding or controlling the velocity of water flowing down an inclined channel, which I had already applied in connection with fish-way constructions, to boat navigation in streams which, though having an ample volume of water, are not navigable by reason of their rapid descent.

Could a system be devised which would provide for boat navigation without the interposition of locks and dams, we could meet at once the requirements of traffic and of fish culture. The possibilities of accomplishing this have interested me greatly. I have had constructed an experimental design with a view to observation and study. The model

has been built by one of the carpenters at the station, and the material for it purchased on approved requisitions, and is the property of the Fish Commission.

BY MR. BLAISDELL.

Questions relating to tour of inspection made by the Commissioner during the summer of 1889.

Question 58. You took a trip to the Pacific coast in one of the Fish Commission cars, did you not?

Question 59. Give names of those who accompanied you on this trip.

Question 60. Were all of them in the employment of the Government?

Question 61. Was your son Angus one of the party?

Question 62. Was he in the employ of the Government?

Question 63. What was the object of this trip?

Question 64. What was the total cost of this trip and cost of repairs to car on its return?

Question 65. What were the results of this trip?

Answer. In the summer of 1889, I made a general tour of inspection with several objects in view. I desired to acquire a better knowledge of the Rocky Mountain and West coast regions that I might more intelligently direct the work in progress and plan the extensions of work contemplated in those sections for which the work was projected.

The arrangements for the trip and the detail of personnel was made in the best interest of the public service.

Car No. 3 was assigned to the work. The crew consisted of Mr. George H. H. Moore, in charge of transportation and living arrangements, and a colored cook.

Capt. J. W. Collins, assistant in charge of the Fisheries Division and Mr. E. C. Bryan, his clerk, accompanied me as far as Leadville, Colo., en route for the Pacific coast under instructions to make a general examination and arrange for the systematic and careful study of the fisheries and fishery industries of the West coast. From Leadville he returned to Washington, being recalled by a telegram from the Superintendent of the Census, Hon. R. P. Porter.

I was accompanied by Mr. O'Connor, my chief clerk, and by my son as a messenger. He was appointed for the temporary service and served without compensation, but his necessary traveling expenses were paid by my instructions in accordance with the following order:

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., July 8, 1889.

J. J. O'CONNOR, Esq.,
Chief Clerk, U. S. Fish Commission:

SIR: Mr. Angus McDonald is hereby appointed messenger on U. S. Fish Commission car No. 3, to accompany party on tour of inspection of U. S. Fish Commission stations. He will serve without compensation. You are authorized, however, to pay such traveling and other expenses as may be incurred by him under instructions from the Commissioner.

Very respectfully,

M. McDONALD,
Commissioner.

True copy.
J. J. O'CONNOR,
Chief Clerk.

I took him because I preferred on so long a trip involving both exposure and hardships to have some one about me who was near to me and yet fully capable of discharging the duties required of him.

I went directly to Denver and Leadville, where I visited and carefully examined the reservation set aside by the President for a Fish Commission station; located the site of the hatchery building and made preliminary inquiries and arrangements with the view of letting the work to contract. Thence proceeded to Great Salt Lake and the Utah basin, which we had been stocking with shad in the hope of being able to colonize this species in that region. Careful inquiry and personal examination was made of the waters with a view to future operations. Thence proceeded to our salmon station on the McCloud River, California; inspected the same; made some necessary changes as to organization and personnel and directed better arrangements to insure water supply for hatching and to guard against contingencies of high water.

Thence proceeded to station at Clackamas, Oregon. Inspected the same; made provision for increased water supply by pumping; made definite organization and assignment of personnel and gave specific instructions as to administration, rendering of requisitions, accounts, and reports. Thence proceeded to the Yellowstone National Park, and at the request of Captain Boutelle, the Superintendent, made a careful examination of the waters of the Park with a view to stocking them. Captain Boutelle accompanied me in this tour of inspection which was made on horseback. I was also accompanied by Mr. Angus McDonald, the only one of my party who felt capable of undertaking the trip.

It was found that all the waters on the volcanic plateau, except the Yellowstone and its tributaries, did not contain fish of any kind, though evidently well suited for the Salmonidæ.

Immediately upon my return I sent a car-load of yearling trout to stock the Gardiner River above the falls and the Fire-Hole and Gibbon forks of Madison River, and directed to be set aside 100,000 lake trout at Northville, Mich., and 25,000 Loch Leven trout to stock lakes Shoshone and Lewis; also 25,000 Eastern brook trout to continue stocking the Gardiner, and 25,000 von Behr trout for the Fire-Hole and Nez Percez. These are now fingerlings, and arrangements are being made to send them out by car. The Grayling and the Red-throated Rocky Mountain trout are now abundant in some of the waters of the Park, and with the additions to be made the nation will have in time one of the grandest fish preserves to be found anywhere in the world.

Returning by way of Duluth, Northville, and Sandusky, I inspected those stations; inquired into their condition and capabilities; visited the site of the new station at Put in Bay, and thence returned direct to Washington.

The trip was made in the exercise of my discretion as Commissioner and in the best interests of the public service. It was planned with due regard to economy, and expenses were carefully considered and controlled. No unnecessary or unusual expenses were incurred. All accounts were made strictly in accordance with law and have been duly audited and paid and passed by the Comptroller.

Question 66. What was the salary of the superintendent of central station under the late Professor Baird?

Answer. I was superintendent of central station in addition to my other duties under Professor Baird. My salary was \$2,400. Mr. W. F. Page was superintendent of fish culture, receiving a salary of \$100 per month. Mr. J. E. Brown was in charge of property at the station, and also I believe custodian of the Museum property stored there. He also received \$100 per month.

Questions 67 to 72. Who is the present superintendent and from what State was he appointed?

Answer. Mr. S. G. Worth is the present superintendent. He is from North Carolina, but he was not appointed from that State. Fish culturists are appointed, and more particularly promoted, for reason of fitness and qualifications. The question of State, section, politics, color or previous condition of servitude does not enter into consideration.

In the absence of previous knowledge such appointments are made tentatively. If experience shows that a mistake has been made the appointee is dropped or discharged, as was the case with Mr. W. H. Bright at the Leadville station.

Mr. Worth entered the service as a trained expert. I had personal knowledge of his qualifications and of his aptitude and energy. I had been anxious for some time to draw him into the Government work. When the opportunity occurred I recommended his appointment to Professor Baird. His compensation was at the time of his appointment \$720. It is now \$1,800 per annum. It is the salary fixed for superintendents of first-class stations. He is assigned as superintendent of central station because he is, in my judgment, best qualified for the position.

Question 73. Has it ever been reported to you that Mr. Worth was addicted to the use of intoxicating liquor?

Answer. Never; nor do I believe it to be the case. Possibly I may have heard such assertions made, but I do not recall any specifically. Unscrupulous and malicious men may circulate any slanderous statement.

Question 74. Have you ever seen him when you thought him to be under the influence of liquor?

Answer. Never. Certainly not since I have been Commissioner of Fisheries, and I do not recollect ever to have seen him intoxicated at any time.

Question 78. Has the Fish Commission a hatching station at Fort Washington?

Question 79. Does the Government own the shad-seine that is used at this station? Please explain its use and how maintained.

Question 80. What disposition is made of the funds obtained from the sale of the fish taken by this seine?

Question 81. Were there any funds left at the close of the seasons 1887, 1888, 1889, 1890?

Question 82. Were any of these funds ever covered into the Treasury Department?

Question 83. Have you an itemized statement of these funds for the different years?

Question 84. Who kept these accounts?

Answer to questions 78 to 84, inclusive. The seine equipment is owned by the Government. The object of it is to obtain eggs for artificial propagation. The fish taken are sold either in the Washington market or on the shore or are consumed by employes of the Commission engaged at the station. The proceeds of sale are applied to the payment of the expenses of hauling the seine as far as they go. Any deficiencies are paid out of our regular appropriations on regular vouchers. In consequence of the difficulty of settling promptly outstanding accounts for eggs, a small balance may be left to the credit of the seine, which is carried over to the next year. None of the funds are covered into the Treasury, but are applied as indicated. It is as if we agreed with some one to run a seine and guarantied him against loss, on con-

dition that the Commission should have the right to take the eggs from the fish caught without any charge.

This work has been in charge of Mr. Worth ever since I have been Commissioner. Detailed statements of the seine operations covering this period, showing fish taken, the amount of sales and disposition of funds so obtained have been already submitted to your committee.

These statements further show that there has been a profit of several hundred dollars a year to the Government by the use of the seine.

Question 85. Is there a steam-launch kept at Fort Washington? Is it launch No. 61, and what are the uses of such launch?

Answer. The launch No. 61 is assigned for service at Fort Washington Station during the shad-hatching season; is used to visit the gilliers, transfer the spawn-takers to and from the fishing shores, and such other duty as the exigencies of the work may require.

Question 86. Is there not another launch charged to that Station called the *Blue Wing*?

Question 87. What is the nature of the work performed by this launch?

Answer to questions 86 and 87. She is used to communicate between the station and headquarters during the season of active work at Fort Washington; to relieve launch 61 in case of accident and damage needing temporary withdrawal and repairs; to assist her in emergencies in press of work and for such other work as the Commissioner may assign to her. Both launches are required for the efficient conduct of the work.

Question 88. Was the *Blue Wing* ever used to carry parties of your friends or those of Mr. Gill and Mr. O'Connor down to Fort Washington?

Answer. Various parties have gone down on the *Blue Wing*, but the launch was not used for the express purpose of carrying such parties. The trips were in the regular line of duty and for authorized purposes. Permission to go by the launch has been repeatedly given not only to friends but to strangers. It involved no expense to the Government and was the exercise of a courtesy which is both wise and proper. Like consideration for the public convenience where it can be exercised without cost to the Government is strictly enjoined upon the commanders of our vessels and the superintendents of our stations. Even if some latitude were exercised in the interpretation of these instructions, I should not be disposed to inquire too closely. At present the *Blue Wing* has been placed at the service of General Ordway during the period of encampment at Fort Washington, she not being at this season needed in the work of the Commission.

Question 90. At any time was there a dancing party went down to Fort Washington on the *Blue Wing*?

Answer. Never to my knowledge. The question "was there went a dancing party" is rather obscure. Certainly no party ever danced aboard the launch; it would not be possible. If any young men and maidens who may have had permission to go by the launch to Fort Washington danced after they got there it was an innocent and proper amusement, to be engaged in at their own discretion.

Question 91. Are any of the men charged to the launches employed at other places than on these launch's?

Question 92. Why was Mr. Sauerhoff charged to the *Blue Wing* when employed at Central Station?

Question 93. Why was Mr. Gray charged as fireman on the *Blue Wing* when Mr. Nelligan was fireman?

Question 94. What was the true work performed by Mr. Gray on this boat?

Answer to questions 91 to 94 inclusive. The launches are manned by special-service men from the Navy and are paid out of the contingent fund of the Navy. This force consists of machinists, firemen, and coxswains. They are not on the rolls of the Commission, with the exception of Mr. Walter Sauerhoff, who is, under the direction of Lieutenant Bayley, foreman of our repair shop at Central Station, where ordinary repair of launches, pump and steam and water plants is conducted. These employés are not charged to particular launches. All are available for assignment when and where needed, and these assignments are changed as the needs or exigencies of the service require.

Mr. Sauerhoff is not charged to the *Blue Wing*. He is assigned to her as machinist, and is paid out of the appropriation for the maintenance of vessels and steam launches. Of course I can not keep in mind the details of work of every employé.

Lieutenant Bayley is in charge of this naval contingent and can give the committee further information if desired.

Question 95. I believe, Mr. McDonald, yours is a strictly scientific department, is it not?

Answer. The intelligence of this question is not very evident, but I will endeavor to answer it. The Fish Commission is constituted and is maintained by the Government to secure certain economic results in the improvement of the fisheries. We seek to obtain these results by the application of *scientific* as distinguished from empirical methods. It is in a word practical and utilitarian in its objects, but truly and essentially scientific in its organization and methods.

Question 96. Did you not so claim before the Committee on Agriculture?

Answer. In presenting an argument to that committee in opposition to the transfer of the Fish Commission to the Department of Agriculture under the provisions of the Paddock bill, I made certain statements in this connection, which I reproduce as follows:

If the question before your committee were a proposition to create a new department, under which the scientific bureaus and commissions could be brought and co-ordinated, with the view to convenience of administration and executive control; if in the constitution of such department care were taken to guard the organization of each bureau or commission from the demoralizing influences of changes for political reasons; if the head of each bureau were held responsible for the scientific methods and results of the work committed to him; if the personnel of such bureau were constituted by selection and the survival of the fittest the question of expert knowledge and fitness alone controlling appointments as well as promotions, such organization would have some obvious advantages, if we consider only the convenience of administration or the necessity of subordinating all work under the Government to departmental control.

If, again, it were proposed to enlarge the scope of the present Department of Agriculture so as to constitute a department of agriculture and fisheries, each represented by its commissioner appointed by the President and confirmed by the Senate, each independent of the other in its internal administration, each with its personnel selected with regard solely to fitness and expert qualification and with secure tenure of office within these limitations, we should again have the advantage of certain convenience of administration, but it is questionable if any increase of working efficiency would result. In the case of the Fish Commission it is more than probable that there would be a distinct and serious loss of efficiency by removing from the Commissioner that direct responsibility for expenditures and for results to which he is now held by Congress and by public opinion and criticism.

The bill now pending before your committee contemplates much more than the subordination of the Fish Commission to departmental control. It proceeds upon the theory expressed or implied that the work now assigned to the Fish Commission is an integral part of agriculture and can be properly performed by a bureau under and in that Department, whereas the Fish Commission in the importance and diversity of the inquiries it is pursuing; in the relations it holds to scientific work and scientific

activities, by reason of the inquiries it is prosecuting; in the importance and value of the results it is securing by the application of scientific methods to the solution of economic problems; in the data it is accumulating; in the intelligent direction it is giving to fishery operations, by its study of the methods, conditions, and results of the fisheries; in its actual farming of the waters, so as to create and maintain a great food resource for the general advantage at the general expense, occupies a broad ground, distinct and separate from the work of a commission of agriculture, and should not be subordinated to or incorporated in that Department.

Question 97. How many of the personnel of the Fish Commission are strictly scientists?

Answer. You must define what you mean by "scientists" before I can attempt to answer the question.

98. Why do not the names of those who do most of the scientific work of the Fish Commission appear in the Blue-Book?

Answer. Because they are not on the regular rolls of the Commission. Some are employed for a period of the year only, at small salaries. Many are volunteers doing the work without compensation, in consideration of the opportunities for original investigation afforded.

Question 100. Why is it necessary to forward so much of the material collected elsewhere for identification?

Answer. The collection of material is a mere incident of the Fish Commission work. It would not be proper under the law for us to maintain a paid staff of naturalists solely for the classification of the collections, and for the description of new species. This work is well done by volunteers without material expense to the Government, and without making any unwarranted diversion of funds to this object.

Question 101. Has the Fish Commission any more cars employed in the work of distribution now than were in use under the late Professor Baird?

Answer. No.

Question 102. Has there been any increase in the number of employés on these cars?

Answer. There has been a large increase in the number of permanent employés. Prior to my administration the messenger service was carried on only a portion of the year. Only the three car captains appear on the permanent rolls under Professor Baird. Now the service is practically continuous, and the entire force is carried on the permanent rolls of the Commission. I have already submitted to the committee statements covering the organization, personnel, cost, and results of work of distribution for the fiscal years 1887 and 1890. These supply full and detailed information.

Question 103. Have you increased the number of men employed at Central Station over the old number?

Answer. I do not recall precisely. Doubtless I have. The information is given in tables already submitted. The work at Central Station has been greatly enlarged and diversified, and would of course require an increase of personnel. There are no more employés than are necessary for the work; all are fully employed. My functions as Commissioner are hardly limited to maintaining the status quo. The Fish Commission is aggressive and progressive. It is constantly enlarging and extending the sphere of its operations. An organization comprehensive enough to cover the work of 1887 would be entirely inadequate to meet satisfactorily present conditions.

Question 104. Did you have a special appropriation for the construction of the aquaria at Central Station?

Answer. No. Their construction and maintenance are provided for out

of the appropriation for the propagation of food-fishes, and under authority conveyed by the language of the appropriation, as follows :

For the introduction by the U. S. Fish Commission into, and the increase in, the waters of the United States of food-fishes and other useful products of the waters, including lobsters, oysters, and other shell-fish * * * and for such general and miscellaneous expenditures as the Commissioner of Fish and Fisheries may find necessary to the prosecution of his work, including salaries or compensation of all necessary employes, \$130,000 (sundry civil act of 1888, Stat. at Large, XXIV, p. 523).

I think it desirable that a liberal special appropriation should be made for the establishment of a national aquarium here in Washington under the direction of the Fish Commission. We have our National Museum, the Smithsonian Institution, the Botanic Gardens, the Zoological Park, the munificent contributions of the Government in aid of science, the arts, and general education. To complete and round out this series of magnificent institutions we need an adequate representation of the inhabitants of that "dim water world" which lies beyond common observation and attracts attention and engages interest and study by reason of its mysteries.

We may have here in Washington an adequate, if not complete, representation of the life of our coast waters, lakes and rivers, living, and under conditions closely assimilating those of their natural habitat. And the Fish Commission, by means of its facilities for collecting and transportation, is already in a position to provide for incidentally, the principal item of cost, in the maintenance of aquaria after buildings and necessary plant have been provided.

The present aquaria are merely working-tools. They provide for the exhibit of economic fishes, and the results of artificial propagation. They afford the opportunity to study the habits and proper conditions of environment of fishes and of other species which occupy essential relations to them as food or enemies. I consider them important and most useful aids and adjuncts to the work of the Commission.

Question 106. Is any employé of the Fish Commission interested in the sale of aquaria at Philadelphia?

Answer. Not to my knowledge. Mr. Seal, who is superintendent of aquaria at Central Station, was, I believe, engaged in such business prior to entering the Fish Commission. It was the experience gained then, and his faculties of close observation and his qualifications as a field naturalist, that led to his being offered his present position in the Fish Commission. Since he became a member of the Commission his services have been given faithfully, continuously, and most successfully to the work assigned him.

Question 107. Do you purchase any of the aquaria used by the Commission of any of the employes of the Fish Commission?

Answer. No. The glass is imported and admitted duty free; the slate and iron frames purchased on competitive bids after careful inquiry, the aquaria put together and all other work done by regular employes of the Commission.

Question 108. Have you ever promised to raise the salary of Mr. E. I. Rogers?

Answer. I do not remember. If I did, the promise was conditional upon his showing the ability to earn the increase.

Question 109. Why did you not do so? At that time did you not say that there were no funds with which to make the increase?

110. And were not some of the men at the station being put off? And at this time did you not raise the salary of Dr. T. H. Bean \$300 per annum; also Mr. C. C. Lewis to \$90 per month?

Answers to questions 108 to 110 inclusive. So far as these questions relate to Mr. Rogers they are covered by statement already laid before the committee. As a general reply I would state, in no individual case has my action been determined with reference to others. Every case has been decided upon its merits. Dr. Bean's increase of salary was made in consequence of his assignment to the editorial work which imposed additional duties and responsibilities upon him. It was one of the assignments made in the re-adjustment of the work in Mr. Smiley's office, which resulted in an annual saving in expenditures on account of the work of this office of \$2,180, as shown by statement appearing elsewhere in my evidence.

Question 111. Why is it that those men and ladies of the Commission that the late Professor Baird considered faithful employés have been left with the same salary as when he died?

Answer. If there are such cases, and you will give me their names, I will answer the question. It is, however, entirely irrelevant and inconsequential. Under the law my predecessors were charged with the responsibility of administration. A similar responsibility devolves upon the present Commissioner. He is not called upon to maintain inflexibly the condition of things he found, but to take charge of a work that was and is in process of rapid evolution and diversification.

Question 112. What was the total cost of the trip to Alaska made by Dr. T. H. Bean and party last year?

Answer. Vouchers of the same are herewith submitted.

Question 113. Was not young Lewis one of this party? Was he selected for any special work?

Answer. Yes. He was selected as were other members of the party, viz, because they were available for the assignment and deemed well qualified for the duties they were to perform. The designation of the personnel for such work is entirely in the discretion of the Commissioner.

This investigation of the salmon fisheries of Alaska was made under instructions of the last Congress and for specific objects. A report of the same has been transmitted to Congress and ordered to be printed. The expenses of the same were paid out of the current appropriations of the fiscal year in which the investigation was made.

Question 115. Is this Mr. Lewis any relation to yourself or wife?

Answer. This question has been answered specifically by myself and others. He is not a relation to either of us. He is a remote connection by marriage of Mrs. McDonald. He is a stenographer, copyist, and generally useful, and receives a salary of \$50 a month, which he earns by faithful and intelligent service.

Question 116. Why did not Dr. Bean make his trip to Alaska this year?

Answer. Why should he?

Question 117. Did the Government pay the salary of Capt. J. W. Collins during the months of August, September, October, November, and December 1887? While he was in Massachusetts were not his traveling expenses paid by the Government?

Answer. I presume they were, but if so, he was in the Government service and his accounts were duly authorized, approved, and paid. I was not Commissioner of Fisheries then.

Question 118. Was he not employed in getting up petitions to secure your confirmation as Commissioner at that time?

Answer. No. I had not been spoken of then for Commissioner. Personally I desired Prof. G. Brown Goode to continue as Commissioner

under the new organization. I do not think I was appointed by the President until the latter part of January, 1888, and was not confirmed by the Senate until the latter part of February following.

Question 119. Has he not said to you that he was instrumental in getting petitions signed by all the fishermen from Maine to Florida to secure your confirmation?

Answer. No. I was not aware that any petitions were circulated with a view to secure my confirmation.

Question 120. Did this work for you have anything to do with his promotion to his present salary and the appointment of his relatives to office?

Answer. Certainly not. Mr. Collins is assistant in charge of the division of fisheries and receives the salary attached to that office. He is in that position because he has demonstrated his qualifications for it; because he is by training, by experience, and intimate knowledge of our fisheries and fishery industries, in all respects the best qualified man for this place, which he has attained by efficient and honorable, as well as arduous service, and by successive and well-earned promotions under Professor Baird, Professor Goode, and myself.

Now, in regard to the questions relating to the Great Falls' fishway, I have not answered them because I do not see their bearing upon this investigation, and it will involve a very heavy piece of work, and bring out the whole history of that work. I am prepared to undertake it if the committee think it advisable after my statement.

The first movement towards the establishment of a fishway at Great Falls was instigated by the State commissioners of fisheries of Maryland and Virginia, under whose auspices a survey of the locality and a provisional plan of the fishway was made by Major Randolph, an engineer in the employment of the Baltimore and Ohio Railroad, I believe. No actual movement towards the construction of that fishway was undertaken until a bill for the increase of the water supply of the city of Washington was introduced and pending. As an amendment to that bill an appropriation of \$50,000 was made for the erection of fishways at the Great Falls of the Potomac.

Q. Do you know the date of that?—A. Yes, sir; under the act approved July 15, 1882, and the act amendatory of said act approved February 26, 1885. I do not know what that amendment was.

That appropriation was made, and under that appropriation the disbursement of money was to be made under the Secretary of War and immediately under the direction of the Chief Engineer of the Army, the Commissioner of Fisheries being required under the law to prepare the plans and specifications for such construction.

Professor Baird was at that time Commissioner of Fisheries, and after various inquiries, running through some time, looking to the best form to be adopted, he selected the general plan which was submitted to him by myself, and I was instructed by him to prepare detailed plans and specifications based upon the general plan which I had submitted to him, which was done. These plans and specifications were transmitted to the Secretary of War, and the construction of the same undertaken under the direction of Maj. J. G. Lydecker, who was then in charge of the water supply.

I will state that no part whatever of the appropriation thus made was disbursed by or under the control for disbursement of the Commissioner of Fish and Fisheries, the Fish Commissioner being simply limited in his functions to furnishing the necessary plans and specifications and to the certification of such authorized accounts as were in-

curred for surveys and drawings, in that connection, all of which were paid by Maj. J. G. Lydecker from time to time upon my certificate.

The fishways were duly let to contract by advertisement in accordance with law. The construction of fishways was progressing until the end of October, 1885, when the works were submerged by a high rise in the river, which put an end to the operations at Great Falls, doing great damage to the fishways.

Q. They were unfinished?—A. Yes, sir. That was in 1885. In the summer of 1886, at the request of the Commissioner of Fisheries, the Secretary of War directed the completion of the lower or No. 6 section of the fishway, no further work being done under that appropriation. In the deficiency bill passed February 1, 1888, there was an item of \$25,000 for the completion of the fishway, the amount for this item being based upon the estimate of the amount necessary, which had been submitted by Maj. J. G. Lydecker.

In the spring of 1888, the present Commissioner, after the appropriation had become a law, brought the matter to the attention of the Secretary of War, and announced his readiness to submit additional plans and specifications necessary, and asked that he authorize the expenditure of a certain amount of money to make the necessary field surveys and the new plans which were required to adapt them to the site.

The authority was granted, and acting under it, Mr. Frank Blaisdell was selected as the engineer to make the field surveys, and under my direction to make the necessary additional plans. These were completed in August, 1888, but when I came to examine them I found that both plans and specifications were too general to permit the advertisement of the work for contract, but served as the basis of a report which was transmitted to the Secretary of War, developing the general plan which it was proposed to pursue in the completion of the work.

Further authority was then asked to employ a draughtsman to complete in sufficient detail the plans and specifications of the work, so that it might be let to contract in accordance with the decision made by the Secretary of War. These plans were made during the following spring and summer, that is, the summer of 1889, by Mr. C. E. Gorham, but they were finished too late in the season to permit sufficient time for the completion of the work before the season of high water in the fall, which would necessarily endanger the constructions.

This involved the postponement of the construction to the present year. The plans and specifications have been completed and ready to be submitted for two months. I have been delayed first by the press of other business, but more especially by the fact that I have not been able to find an engineer qualified for the work who is willing to undertake that class of work, since it involves only temporary employment, only two or three months.

Q. Could you not ask the Chief of Engineers to detail a suitable man for the work?—A. That is a matter for them. They are not willing to do that. They prefer that the engineer to take charge of this construction should be designated by the Commissioner and the matter is now held in abeyance.

To sum up the matter, two appropriations have been made, of \$50,000 and \$25,000. Of the appropriation of \$50,000 originally made I think there remains unexpended some \$4,000 or \$5,000 and a lot of material which was left over from the old fishway, amounting in value to probably as much more. Of the appropriation of \$25,000 not a dollar has been spent, and being a continuing appropriation it is available whenever the work is undertaken.

Q. Do you consider that this is an important work to be done?—A. I consider it a very important work with a view to settling the possibilities of the opening of falls like that to the ascent of fish. I do not think it is certain when the work is completed that it will result in passing shad. I believe so firmly, but it is not certain, and, therefore, it is a work which is, and was at the time, considered an experimental work. It was thought proper to make that expenditure of money to test, once for all, under the best conditions and under the most careful observation and construction the possibilities there were in that direction.

Q. What is the height of the falls?—A. Seventy-one feet.

I have given you this general statement. I can not give you the whole history of the matter without involving labor of ten days or a week, but I do not see its bearing at all upon the administration of the Fish Commission.

Q. It is a question which is really under the direction and control of the Secretary of War, with your advice and concurrence. Have you discussed the matter with the Secretary of War during the present season?—A. Not during the present season. I may state this, that the Secretary of War, in 1889, in approving my general plan and specification submitted in 1888, decided that the work should be done by contract, the supervision of the work to be made by an engineer appointed by the Commissioner of Fisheries, but that all disbursements on account of the work should be made by Colonel J. M. Wilson, who was then in charge of the public buildings and grounds and a great many things in Washington, and who was succeeded by Colonel Elliott. I have had no further communication with the Secretary of War, nor was there necessity for any further communication with Colonel Elliott until I was ready to submit all the plans and specifications, which I have been for two months. They are already rolled up, the whole work completed, but it requires me to be in a position before I submit the plans, to recommend an engineer who shall take charge of it.

Q. And you have not been able to find such a man?—A. I have not been able to send in plans and specifications both for want of time—I have had some conference and correspondence—and for the want of a suitable person whom I felt I could put in charge of the work. For that reason I delayed sending in the plans and specifications.

Q. I understand you to say that in the disbursing of the \$45,000 out of the original appropriation of \$50,000, all the disbursements were made under the direction of the Secretary of War?—A. Yes, sir; by an officer of the Engineer Department.

Q. And the Fish Commission did not handle any of the money?—A. Not a dollar of it. My experience has been that there is a great deal of trouble in getting them even to approve expenditures that are perfectly reasonable.

Then there is one other question about fishways I should like to answer. I did not cover it.

At any time have you approved or had made plans of fishways other than those for the Great Falls fishway during Government time?

I will state that I have had a number of drawings and plans made in regard to fishways during Government time, but they all related to the development of Government work.

I may mention, for example, that Mr. Rogers was employed in making drawings of a little model fishway that we have at our Wytheville Station, which is there with a view of collecting the trout from the river, running them up into the pond above, and in that way securing them

for spawning. I considered it an interesting development in that direction, and I desired to have that printed in our report. So I had him make drawings of it.

Q. The work had not been constructed?—A. The work had been; it is part of the station.

Q. Is it a success?—A. Yes, sir. I intend to apply the same idea to the Colorado Station. It is a matter of the expenditure of \$20 or \$30. The fish, of course, in their spawning season, will go up into the rapids of the stream to find their spawning grounds, and by placing these intercepting fishways in the runs of the fish we will be able to collect them under such conditions that we can handle them without any trouble. I merely mention that. That is one instance.

Again, Mr. Rogers has made a series of sketches looking to the illustration of a revised report upon fishways, which I prepared to publish as a part of the official documents of the Fish Commission. Some years ago Mr. C. G. Atkins, of Maine, prepared a report on fishways which covered all existing knowledge at that time, and gave illustrations of all the fishways of different designs and devices which were in use in this country and abroad. Since that time, of course, there have been modifications of the designs and improvements and new devices which it is my intention to publish for the general information of fish-cultural interests.

Q. I will ask you whether you or any draughtsman or employé of your department has ever spent any time upon any private enterprise in the matter of fishways?—A. No, sir; there is no private enterprise in the matter of fishways. Although there is a pride and personal interest, of course, in my own invention, yet as a matter of profit there is no possibility of profit in this work. My only interest or ambition in the matter is to progress along the line of fish-cultural development. There was a time, I must confess, when I was young and green, when I hoped with the enthusiasm of an inventor that a great deal would come out of this fishway, but I abandoned that idea years ago. It is one of those inventions which will grow as slowly as an oak, and which will bear its fruit, probably, after I am dead. But as to my getting anything out of it, I have not the slightest anticipation.

I will give you another example. I may state that I myself, in response to a request of the *Société d'Acclimatation* of France, prepared a design of a fishway for the Vienne River. I prepared that myself, made the drawings. I do not know whether I did it in Government hours or not. I know that I do not observe any office hours. My work is all the time in the interest of the Government, but I think I did this work at home at night. I prepared the plans and forwarded them to the *Société d'Acclimatation*. They were submitted by request to the *Département des Ponts et Chaussées*, which represents the engineer department of France, and by them submitted to the criticism of their engineers of the sub-departments, and those fishways were adopted in France after the criticism of the best engineers, among the best engineers of the world, and are now in course of construction on their rivers. The one on the Vienne River has been completed, and two are now being built on the Seine.

Q. Did you receive any compensation from the French Government for that work?—A. Nothing except a medal; what they call the *Geoffroy Saint Hilaire*, medal from the *Société d'Acclimatation*.

I will state further that plans and models of my fishway of different designs have been made from time to time at Government expense, in pursuance of the general plan of having a complete series of models of

fish-culture devices and aids in our exhibition series in the National Museum. Those models were sent to the Berlin Exposition and to the Fisheries Exposition in London, and in both cases the design of the fishway was approved by the committee and received the gold medal.

Now this question I should like to answer:

Did you have plans made for a fishway at or near Bowling Green, in Kentucky?

Yes, sir. Those plans were made at the request of Lieutenant Mahan, an officer of the Engineer Corps, who was in charge of the improvements on the Green and the Barren Rivers in Kentucky, a law having been passed by Congress requiring, or rather authorizing, the Secretary of War in his discretion, wherever obstructions were placed in the rivers by Government agency or authority which prevented the upward movement of fish, to provide for the construction of fishways or passes in connection with the dams. I responded, of course, to the request of Lieutenant Mahan, and having received from him plans of the dam I prepared the detailed plans and specifications for the fishway, which I sent to him. It was a response merely to the request of an officer in another department of the Government.

Q. To carry out a provision of law?—A. Yes, sir; to carry out a provision of law; and I would have been negligent or indifferent to my duty if I failed, in this or any other case, where a similar demand for information was made to comply with it as far as I could.

Now, I desire to take up some of the points relating to the general statements which have been published or written by Mr. Smiley in respect to the administration of the office.

I want to set myself right. I hardly consider it necessary, but I want to set myself right upon this question of political appointments; at least I want the committee to know just what the facts are, but I want to put them on record.

I will state that when I became Commissioner of Fisheries I was subjected to a great deal of pressure on the part of the Democrats to turn out Republicans and put others in office. I have been subjected to a similar pressure under the present administration to turn out Democrats, of course, and put in Republicans. Now, I wish to state broadly that at the very beginning of my administration I took the ground that politics should not enter into it; that no appointment should rest upon political considerations or be determined by political exigencies.

I beg to submit the following correspondence, as an illustration of the uniform policy which I have pursued. Mr. W. H. F. Lee, member of Congress, forwarded to me the following letter from the Cleveland Democratic Association of Virginia.

CLEVELAND DEMOCRATIC ASSOCIATION OF VIRGINIA, 1888.

Falls Church, Fairfax County, Va., April 13, 1888.

DEAR SIR: This association hears with surprise that Mr. Center, of Falls Church, Va., a Republican, has received a position in the Fish Commission at a salary of \$700 a year, and, deeming that these positions should be occupied by Democrats, we protest against the aforesaid appointment, and request that the resignation of Mr. Center be called for, and Mr. G. E. Drinkard, of King George County, substituted in his place.

Very respectfully,

D. E. PORTER,
President League.

Hon. W. H. F. LEE,
House of Representatives.

This was indorsed by Mr. Lee as follows:

[Indorsement.]

Respectfully referred to Colonel McDonald, with the request that he will furnish me with information about this case.

W. H. F. LEE.

In response to that, on May 17, 1888, I wrote Hon. W. H. F. Lee, House of Representatives, as follows:

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., May 17, 1888.

DEAR SIR: In response to yours, transmitting letter of Mr. D. E. Porter, president of the Cleveland Democratic Association of Virginia, I beg to say that appointments in the U. S. Fish Commission are made solely with reference to the qualifications and fitness of the appointees for the positions to be filled and without regard to the political party to which they may belong. As you are no doubt already aware, the majority of the employes in the service of the Commission are those having expert knowledge in matters connected with the different departments of the work.

Very truly, yours,

M. McDONALD,
Commissioner.

Hon. W. H. F. LEE,
House of Representatives.

I did not consider that as clear a definition of the position I ought to take as was necessary, and four days afterwards, May 21, I addressed an additional letter to Hon. W. H. F. Lee, as follows:

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., May 21, 1888.

DEAR GENERAL: I wrote to you on Friday last in regard to the demand made by the Cleveland Democratic Association that Mr. Center, an employe of the Commission, should be discharged and another individual indicated by them should be appointed in his place.

I now beg to say that previous to the receipt of the communication from this association I was not aware that the gentleman referred to was an employe of the Commission. Upon inquiry I find that he is a clerk in the statistical division, receiving a salary of \$40 a month, for which he is rendering most capable and efficient service.

The request for his discharge is based simply upon the fact that he is a Republican, and the demand for the appointment of the individual named to succeed him is for the sole reason that he is a Democrat. Of course, considerations based upon the political affinities of a person must have little weight in a department which must make its selections with reference to special qualifications for the positions to which they may be assigned. I will add further in regard to Mr. Center that if he were discharged and it were necessary to fill the vacancy thus created, I should be compelled to make the selection from some other State than Virginia, which is more largely represented in the Commission than under any equitable distribution of the offices it is entitled to be.

Very truly, yours,

M. McDONALD,
Commissioner.

Hon. W. H. F. LEE,
House of Representatives.

In regard to Mr. Bright, I will say that W. H. Bright was, upon the recommendation of Senator Teller, on January 14, 1890, appointed an assistant at the Leadville Hatchery, Colorado, at a salary of \$60 per month. Pursuing the usual policy, it was my desire to constitute the personnel of the station, outside of the superintendent, of citizens of the State. Mr. Bright's appointment was a provisional one; his continuance in the work depended upon the qualifications and fitness he developed, qualities which could only be ascertained by trial.

The history of his case from his appointment to his discharge is given in the following letters :

January 14, 1890, letter of appointment.

May 10, 1890, letter of E. M. Robinson, superintendent of station, reporting Bright for neglect of duty and insubordination.

May 16, telegram of Commissioner directing Mr. Robinson to discharge Bright at once and make written report of circumstances.

May 17, 1890, letter of E. M. Robinson reporting discharge of Bright, etc.

June 9, 1890, letter of W. H. Bright asking for a personal interview.

June 11, 1890, letter of Commissioner declining a personal interview. Asks him to submit in writing any statements he may have to make, and they will receive careful consideration and investigation.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., January 14, 1890.

DEAR SIR: You are hereby appointed an assistant at the U. S. Fish Commission Hatchery at Leadville, Colo., at a compensation of \$60 per month, to take effect on this date. You will make arrangements to proceed at as early a date as practicable to the station and report to Mr. E. M. Robinson, superintendent, for assignment to duty.

Very respectfully,

M. McDONALD.
Commissioner.

W. H. BRIGHT, Esq.,
Washington, D. C.

U. S. COMMISSION OF FISH AND FISHERIES,
Leadville, Colo., May 10, 1890.

DEAR SIR: Yesterday morning Col. W. H. Bright came to me for permission to go to town, and stated that he would certainly be back by 12 o'clock; I therefore gave consent. Messrs. Martin, Lewis, and myself were at work some 400 yards below the hatchery fitting up one of the cabins. I was so positive that Colonel Bright had returned that I did not think it necessary to send a man to look after the hatchery or ditches. On my way from dinner I did not see any one, so sent Mr. Lewis to see if he had returned, and if not, to feed and look after things until he did. Mr. Lewis soon returned and stated that the head screen above the ditches was choked up and the water was entirely shut off from three of the ditches, and most of the fish dead. I went up at once to remedy matters as best I could. At 3 p. m. Colonel Bright arrived. I sent Mr. Lewis for him to come and assist in getting out the dead fish. When he came down I told him if he had fulfilled his promise that this accident would not have occurred. He then went on to me in a most terrible manner and said that I need not try to blame him for this loss, and that if I had attended to my duties it would not have occurred, and I should have had Martin or Lewis there to look after the place. Then he defied me as a man, and said that no man had been born of woman that he feared. He also accused me of being a drunkard and said I was afraid of him and ran away from him when he went to town this a. m., because I happened to ride down the hill with Mr. Hunt, and gave him (Hunt) the mail. He also said that I had accused him of this because I did not like his religion (which I did not know he had) and, too, because of his political creed.

All of this is a falsehood. Colonel Bright knows perfectly well that I have treated him with respect and favored him in every way possible on account of his gray hairs and inability to do laborious work. I certainly think I have a right here as superintendent to lay any blame on the person on whom in my opinion it should fall without being subject to such slanderous remarks and dictated to by him or any one that is supposed to be under my direction here. As to his defying me as a man, of course my hands are tied; he is an old, gray-haired man, but possibly some day he will find out that I am no coward. During the entire controversy I held my temper and tongue and did not speak to him in any way but in an ordinary tone of voice, while he acted like a crazy lunatic, and could have been heard all over the premises, cursing and damning and abusing me in every way possible. Now, I make this official report to you and ask that you transfer him from this station as soon as you can, for we can no longer get on together. He has not offered any apology yet and assumes the air of a

victorious bully toward me. I will not notice him after this except in an official way, and do as superintendent appeal to you for an immediate transfer or removal, which will be a relief to me and a benefit to the station.

I am, very respectfully,

E. M. ROBINSON,
Superintendent.

Hon. M. McDONALD,
Commissioner, Washington, D. C.

U. S. FISH COMMISSION,
Washington, D. C., May 16, 1890.

You should have discharged Bright at once when he became insubordinate. Discipline and subordination to the superintendent must be enforced at all hazards. You will relieve him from duty immediately, and make written report to me of circumstances.

M. McDONALD.

E. M. ROBINSON,
Superintendent U. S. Fish Commission Station, Leadville, Colo.

U. S. COMMISSION OF FISH AND FISHERIES,
Leadville, Colo., May 17, 1890.

DEAR SIR: Your telegram dated May 16 is at hand. In reply will say that I have this day written a letter to Colonel Bright relieving him from duty as an assistant on the work. The circumstances of this matter were put in my report of May 10, 1890, and if necessary I can prove every word that was said by Messrs. Lewis and Martin, who were on the ground at the time.

On delivering the letter to Colonel Bright he said that he would go to Washington immediately and call for an investigation, and said he wanted the Commission to furnish him with a pass. I told him I had no authority to do this, but you would settle the matter. He then said, "he be damned if the Commission wouldn't have to pay it." He also said that he proposed to see my successor appointed, and that the "longest pole would get the persimmon." I told the colonel that he had best not say more, for if he was going to Washington you would give him a hearing.

If you wish me to put what I have said in any other shape I can do so and file an affidavit (sworn) with it. His air and intention is, I am positive, to give me and any Fish Commission people trouble that he can. He is a vile man, and would now stoop to any meanness to injure me. I trust he will soon leave, for I don't wish to have any more trouble with him, for it would be hard to tell what the ending would be.

I am, very respectfully,

E. M. ROBINSON,
Superintendent.

Hon. M. McDONALD,
Commissioner, Washington, D. C.

WASHINGTON CITY, D. C., *June 9, 1890.*

DEAR SIR: Since my arrival in this city, which is two weeks ago, I have made several unsuccessful attempts to see you, and Mr. Connor informed me that you would not see me in person. Sir, will you please inform me by letter if you are still of that same mind?

I have the honor to be, very respectfully, your obedient servant,

W. H. BRIGHT,
No. 494 Maryland avenue southwest.

Hon. M. McDONALD.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., May 11, 1890.

SIR: Through Mr. O'Connor, chief clerk, you were informed that if you had any statements to make in reference to your discharge from the service of the Commission, or any charges to make in reference thereto, you must submit the same in writing,

and they would receive careful consideration and investigation. Such written statements can alone form the basis of any official action to be taken, and such action can not be promoted or advanced by any oral discussion of matters.

Very respectfully,

M. McDONALD.

W. H. BRIGHT, Esq,
494 *Maryland avenue, southwest, city.*

I understand that Mr. Smiley in his testimony before the committee stated that his official duties did not occupy his full time, and that he sought occupation in the Census Office that he might have better opportunities for work. On January 16, 1889, Mr. Smiley proposed to prepare a prospectus for a new carp pamphlet, and if approved to proceed with the compilation of the same. The proposition was approved by the Commissioner. On January 28, 1889, the prospectus was submitted, and approved March 26, 1889, and the compilation was directed. On July 6, 1889, in response to an inquiry from the Acting Commissioner, Mr. Rathbun, as to the status of the work, Mr. Smiley, under date of July 8, replied he had done nothing except to collect some materials; that the present condition of the library, publication, and stationery work rendered work on such a job impossible. I submit the papers in connection with this.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., January 16, 1889.

The COMMISSIONER:

There is renewed call for carp pamphlets. The stock has been exhausted for some time. None of those we have, just meet the want. All contain good matter. I think I might prepare a prospectus of a new one which shall embody the essential features of value in all the old. If the prospectus meets your approval the compilation may be undertaken immediately.

C. W. SMILEY.

This seems to me the most important thing to do now in pursuance of your instructions of August 27.

C. W. S.:

Please prepare a prospectus as proposed, for consideration and action.

McD.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., January 28, 1889.

The COMMISSIONER:

I submit herewith prospectus for a carp pamphlet, in accordance with your instructions of recent date.

C. W. SMILEY.

The general prospectus for report covers the ground desired and is approved; utmost care must be taken to insure exactness of statements and illustrations.

M. McDONALD,
Commissioner.

PROSPECTUS OF A FISH COMMISSION PUBLICATION TO BE ENTITLED "CARP CULTURE."

This is designed for issue in pamphlet form to persons seeking information on the subject, it first having been printed in the Fish Commission Report or Bulletin. It is estimated that the ground can be well covered in from seventy-five to one hundred

printed pages. The following is an outline of the proposed chapters and an indication of their contents.

CHAPTER I.—The desirability of fish culture in inland waters; the place of carp in this industry; its general claims for attention; its economic importance; literature on the subject.

CHAPTER II.—Different kinds of carp; their systematic position, and allies; the necessity of maintaining purity and preventing hybridization.

CHAPTER III.—Ponds; the selection of sites for ponds; the different kinds, and their uses and methods of building. (Benecke's description, with numerous illustrations, is probably the best for this purpose.)

CHAPTER IV.—Plants and seeds; the lists prepared by Professor Ward and Mr. Hessel may be used; those plants and seeds that are of greatest practical value should be described and figured, so far as possible, in order that people may identify and obtain them with as little expense as practicable.

CHAPTER V.—Food for carp; the different kinds of food supplied by nature should be described, and those kinds which can be furnished at least cost artificially. Something may be added upon the systematic feeding experiments which have been made.

CHAPTER VI.—Growth; the rate of growth, and the size to which carp attain; the environment which influences the same should be described.

CHAPTER VII.—Spawning; the most advantageous and disadvantageous circumstances should be enumerated; methods for distinguishing the sex; artificially controlling the deposition and hatching of eggs, etc.

CHAPTER VIII.—Enemies; all the forms of life which prey upon carp or its eggs should be fully described and, so far as possible, figured, to enable farmers to identify them. The most careful directions should be given for exterminating or keeping within control the worst enemies of the carp culturist.

CHAPTER IX.—Diseases. Such information may be given as will enable persons to identify the prominent diseases, especially fungus, and the method of treatment indicated.

CHAPTER X.—The edible qualities of carp. In this chapter should appear a statement of the general claim as to its edible qualities, the best methods of purging, killing, and cooking; and a summary statement as to the reception with which it has met in the United States.

CHAPTER XI.—Catching, handling, shipping, and storing. The various methods of catching carp and of transferring them should be described.

CHAPTER XII.—Work of the U. S. Fish Commission. Here may be given a summary and historical statement of the efforts of the United States Fish Commission, from the beginning to the present time, to establish this industry. This may be supplemented with a brief statement of the work of the various State fish commissions, what has been done by private enterprises, etc.

CHAPTER XIII.—A dictionary or glossary of terms should be added, explaining the meanings of words not in common use, defining the metric weights and measures, etc., to bring the contents of the pamphlet within the reach and comprehension of the average farmer throughout the country. There will also be needed an index.

CHAPTER XIV.—Appendix. There may or may not, as is deemed best, be added a brief appendix with reference to goldfish and other allied forms.

This will be provided separately.

C. W. S.

MEMORANDUM TO MR. SMILEY.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., July 6, 1889.

Please inform me (1) when you were instructed to prepare the proposed new pamphlet on the cultivation of carp; (2) when it will be ready for the printer; and (3) how many is it intended to print.

RICHARD RATHBUN,
Acting Commissioner.

REPLY TO MEMORANDUM OF ACTING COMMISSIONER.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., July 8, 1889.

The table of contents for a carp pamphlet was approved about March 1, but there has been nothing done (except the collecting of some materials) towards preparing a manuscript. This being a matter outside the usual office routine, has been crowded out, much to my regret. Present condition of the library, publication, and stationery work renders work on such a job impossible. I do not know that the question of how many to print has ever been reached.

C. W. SMILEY.

I submit further the following statement in reference to the same matter. On May 16, 1889, Miss Rockwell, a competent, faithful, and efficient clerk in Mr. Smiley's office made application for leave of absence.

In recommending the granting of the application Mr. Smiley states:

It is necessary that I request permission to employ a substitute with the June salary thus released.

If there was not sufficient work to employ fully the time of his office force, he was criminally negligent of his obligations as an employé of the Government in recommending an unnecessary expenditure of the public money.

WASHINGTON, D. C., May 16, 1889.

DEAR SIR: I have the honor to hereby make application for leave of absence from the 20th instant to the 30th of June, inclusive, with the request that the twelve days of May be allowed me on annual leave, and the month of June without pay.

The fatal illness of a family connection, requiring my absence from the city, is the reason for asking so long a leave.

Very respectfully,

JULIA L. ROCKWELL,
Clerk, Office of Records.

Hon. MARSHALL McDONALD,
U. S. Commissioner of Fish and Fisheries, Washington, D. C.

In recommending this application it is necessary that I request permission to employ a substitute with the June salary thus released.

C. W. SMILEY.

O'C.

For recommendation.

McD.

C. W. S.:

Request for leave approved. Arrangements will be made by transfer of Mr. Peter Parker from property division for the month of June.

By direction of the Commissioner:

J. J. O'CONNOR,
Chief Clerk.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., May 16, 1889.

The following articles or labor are needed for office records and publications:
1½ months labor, male clerk, to be selected by C. W. Smiley..... \$70. 00
One to do the clerical work and be available to assist in moving is needed.
Respectfully submitted.

C. W. S.

In reply to the charge of extravagance in the use of stationery, etc., I make the following statement:

C. W. Smiley charges extravagance and waste in the use of stationery. It would be expected that with the addition of new stations and with the increase of work in all divisions of the commission, there would be an increased expenditure for stationery. This has not, however, been the case. The cost of stationery in—

1886-'87 was	\$1,664. 95
For 1887-'88	1,766. 02
For 1888-'89	1,395. 46
For 1889-'90	1,279. 85

There having been a steady reduction in cost per annum under my administration. A certified statement of issues, compiled from the records, is herewith appended.

Cost of stationery issued from July 1, 1883, to June 30, 1890.

1883-'84	\$1,010.95	July 1, 1887, to Dec. 31, 1887....	\$1,193.09
1884-'85	837.21	Jan. 1, 1888, to June 30, 1888....	572.93
1885-'86	1,186.74	1888-'89	1,395.43
1886-'87	1,664.95	1889-'90	1,279.85

The above is a true statement, as shown by the stationery account books.

CHAS. W. SCUDDER.

JULY 16, 1890.

Now I desire to state that these records were in Mr. Smiley's immediate charge. It was his official business to know the cost of stationery. He has made a misstatement when it was his official duty to know the fact.

I beg also to submit a comparison of the cost of the work under Mr. C. W. Smiley and to the same work as now distributed and assigned.

January 1, 1888, just prior to my assuming the duties of Commissioner, the office of Records and Publications was constituted, as follows:

	Annual compen- sation.
C. W. Smiley, clerk in charge	\$2,000
C. W. Scudder, clerk	1,080
H. P. Jerrell, clerk	1,000
Miss J. L. Rockwell, clerk	840
C. E. Latimer, clerk	840
H. P. Parker, clerk	660
Albert J. Stoerzer, messenger	300
Total annual salary roll	6,720

The work of this office at present, July 1, 1890, is distributed as follows:

Dr. T. H. Bean, the ichthyologist of the Commission, is discharging the duties of editor with an increased compensation of	\$400
Mr. C. W. Scudder is in charge of the records and correspondence, and also assists in proof-reading, etc. He receives a salary of	1,200
Miss Rockwell is a clerk in his office, receiving	840
Albert J. Stoerzer is in charge of stationery and distribution of publications, and receives	600
Ebenezer Ellis is acting librarian, receiving a salary of	1,500
Total	4,540

From this it will be seen that the work performed under Mr. Smiley, as clerk in charge in 1888, at a cost of \$6,720, is, as now distributed and assigned, accomplished at an expense of \$4,540, being a saving per annum of \$2,180.

At present, moreover, the service is much more efficiently performed than it was under Mr. Smiley.

Mr. C. W. Smiley charges that in rejecting the proof of the report proper of 1886, which had been prepared by him, and in having the same revised and re-edited, I had arbitrarily subjected the Government to increased expense. In reply I beg to submit estimates by the Public Printer of the cost of printing the report proper as prepared by Mr. Smiley, and of the cost of printing the revised report as issued. Looked at from an economical stand-point only, my action resulted in an actual saving to the Government, as shown by the following summary, of \$91.08.

Cost of cancelled report—had it been printed:

Composition	\$207.29
Press-work, folding, paper	426.77
Electrotyping	41.76
	\$675.82

Cost of revised report:

Composition	\$112.00
Press-work, folding, and paper	244.93
Electrotyping	20.52
	377.45

Difference	298.37
Deducting cost of composition of canceled report	207.29

We have, as the result of revision, a saving of 91.08

Considerations of economy alone should not prevail in the issue of Government publications. A report may be in such shape as to make it undesirable to print without close pruning and revision. It may have conspicuous literary defects which require correction. It may contain errors of fact, and conclusions based on misapprehension or misinterpretation of facts.

These defects characterized the report proper of 1886 as submitted by Mr. Smiley. It was in consideration of these that I determined to relieve him from his duties as editor, and to constitute a committee on publications, as provided for in the organization of the Commission formulated by my immediate predecessor, Prof. G. Brown Goode.

Dr. T. H. Bean, the ichthyologist of the Commission, was designated to take charge of the editorial work, he having the necessary training, experience, and qualifications requisite to perform these duties to the credit of the Commission and the satisfaction of the general public.

In further explanation of my action in the matter of this report, I submit explanatory memorandum given to H. A. Gill, disbursing officer of the Commission authorizing the payment out of the general appropriation of the cost of composition of the original report as prepared by Mr. Smiley.

MEMORANDUM FOR MR. GILL.

U. S. COMMISSION OF FISH AND FISHERIES.

Washington, D. C., January 14, 1889.

The composition, proof-reading, etc., referred to as canceled, is the report proper of the Commissioner of Fish and Fisheries for 1886, prepared by Mr. Smiley. Upon examination of the proof I found that, instead of being a simple digest of the work of the year, it also included a discussion of the results from the stand-point of the Commissioner.

Relating, as the report did, to the work carried on under Professor Baird, the present Commissioner did not feel that he should take the responsibility for the report proper as set up and proofed. Consequently it was referred to a committee for condensation and emendation, which has been effected to such an extent as will greatly cheapen the cost to the Government of the publication of the completed report.

Whilst, therefore, the canceling of what had been already set up imposes an additional burden upon the contingent fund of the Commission, it is in the direction of economy so far as the expenditures of the Government are concerned. I therefore consider that the expenditure will be recognized as proper and expedient by the Comptroller.

M. McDONALD,
Commissioner.

OFFICE OF THE PUBLIC PRINTER,
Washington, July 12, 1890.

The following is an estimate of the cost by the "principal items" in the work called for. When completed the bill may be above or below this estimate, as the items are necessarily only approximate:

Extract from Fish Commissioner's Report, 1886 (58 pp.), 11,000 copies:	
Composition	\$112.00
Presswork, folding, paper.....	244.93
Electrotyping	20.52
Total.....	377.45

If you desire the work done, please sign below and return this estimate at once.

FRANK W. PALMER,
Public Printer.

I hereby certify that I have examined this estimate, and that the work estimated for is necessary.

OFFICE OF THE PUBLIC PRINTER,
Washington, July 12, 1890.

The following is an estimate of the cost by the "principal items" in the work called for. When completed the bill may be above or below this estimate, as the items are necessarily only approximate:

[Canceled.]

Extract from Fish Commissioner's Report, 1886 (116 pp. with title), 11,000 copies:	
Composition	\$207.29
Presswork, folding, paper.....	426.77
Electrotyping	41.76
Total.....	675.82

If you desire the work done, please sign below, and return this estimate at once.

FRANK W. PALMER,
Public Printer.

I hereby certify that I have examined this estimate, and that the work estimated for is necessary.

Q. So that instead of resulting in a loss it resulted in a gain, in an economy?—A. Yes, sir; and a decent report. His report was not fit to be printed.

C. W. Smiley charges that he called my attention to the extravagant demands for stationery coming from stations, cars, offices, vessels, etc., but that I disregarded his representations, etc.

In reply I submit (1) his memorandum of April 2 to which I presume he refers. (2) My reply of following day directing him to indicate specifically in what respect and by whom extravagance has been manifested in respect to the use of stationery. (3) His letter of April the 4th, denying that he had implied any extravagant use of stationary by stations, cars, offices, or vessels.

MEMORANDUM.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., April 2, 1889.

THE COMMISSIONER:

The stationery requisitions herewith represent the minimum purchase supply needed. They are made on the presumption that the Commissioner will carefully protect this office from extravagant demands coming from stations, cars, offices, vessels, etc. Unless such requisitions are carefully pruned prior to approval, it may be expected that requisitions for additional purchases will be made by me.

Respectfully,

C. W. SMILEY.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., April 3, 1889.

DEAR SIR: In submitting your requisition for stationery use for quarter ending June 30, 1889, you state, in memorandum, that stationery requisitions "are made on the presumption that the Commissioner will carefully protect this office from extravagant demands coming from stations, cars, offices, vessels, etc."

In making this statement you imply that extravagant use of stationery has been made by stations, cars, offices, and vessels; and if such be the case I desire to take measures for its correction.

You will please, therefore, indicate to me specifically in what respect, and by whom, the extravagance has been manifested in respect to the use of stationery.

Very respectfully,

M. McDONALD,
Commissioner.

C. W. SMILEY, Esq.,
U. S. Fish Commission.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., April 4, 1889.

DEAR SIR: I am not aware that I have implied any extravagant use of stationery to have been made at stations, cars, offices, or vessels. I therefore regret that I can not comply with your request for detailed information.

Very respectfully,

C. W. SMILEY.

Col. M. McDONALD,
Commissioner.

I hardly desire to rest my vindication upon a letter of Mr. Smiley's, but I beg to submit, as throwing some light upon matters, a letter received by me from him in July, 1888, in which he took special occasion to go out of his way to commend my administration.

[Private files, 1888.]

943 MASSACHUSETTS AVENUE, July 4.

MY DEAR COLONEL: The Commissioners of the District of Columbia have honored me with an (unsought) appointment as one of the delegates to represent this District at the Fifteenth National Conference of Charities and Corrections, to be held in Buffalo, July 5-11. If you find any occasion to communicate with me please telegraph me at Music Hall, Buffalo, N. Y., any of those dates, and I will take much pleasure in responding.

I may improve this opportunity perhaps to tell you how exceedingly I am gratified with your management of Fish Commission affairs. It has improved upon the highest expectations. Last evening one of Dr. Kidder's supporters admitted that the Commission is in far better hands than it would have been had the doctor been appointed.

Colonel, you appear almost like a new man, now that the trials and vexations of the past eight years have so fully departed, and no one is more pleased than I am over it.

In my absence please extend to Mr. Latimer every kindness, as you have to me. He is one of the noblest men in the whole Commission.

Most faithfully,

C. W. SMILEY.

Colonel McDONALD,
1515 R Street.

And as illustrating the troublesome character of the man under all conditions of public service, wherever he has been connected with it, I should like to include this letter in my evidence, but it will be for the committee to decide whether it shall be or not. I will read it:

[Confidential.]

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., August 26, 1887.

DEAR COLONEL: Ferguson staked all, and—lost. Judge Alexander McCue, Solicitor of the Treasury, has been appointed as Commissioner. Ferguson is disappointed and disgusted. He talked quite freely even to me! Some wonderful things have tran-

spired, of which I will tell you when I see you. The Commission is *safe*. Ferguson *must go*! He don't see it yet, but I do, and I can tell who will succeed him, I think! Goode has made a blunder and lost. He went so far as to espouse Ferguson's cause! But the *great Grover Cleveland* has spoiled all their schemes.

Yours, truly,

C. W. SMILEY.

I desire, as soon as we can, to have called for the defense several of these gentlemen and submit a series of questions, not anonymously. I shall take the responsibility for them, and leave it to the discretion of the committee to adopt them as it pleases, to show the intriguing character and motive which is behind all this business.

I do not know that it is necessary for me to say anything further in regard to the filter than has been brought out before the committee, but I desire to file with the committee my bills. Our records show that nothing has been paid by the Government. I desire to submit my bills, which do not cover one-half, to the amount of \$208, which I have paid in the development of the plans which were undertaken primarily with the desire to establish the possibility of an aquarium in Washington.

Q. Do I understand you to say that the Government has paid nothing for the construction of these filters?—A. Nothing, except the labor of the men. The material of the filters now in the building I paid for.

Q. And all that the Government has contributed to the filters that are now in the central building is the labor of the men?—A. Yes, sir. I considered it just as important as any other work, but instead of developing a filter in my own interest at Government expense, I have developed at my own expense an important advance in fish cultural possibilities for the Commission.

The abstract of the bills is as follows:

Apr. 30, 1888. Adams Express Company	\$0.25
Patterns for filters:	
Oct. 29, 1888. D. Ballauf	\$8.00
June 9, 1889. D. Ballauf	12.00
Oct. 17, 1889. D. Ballauf	12.00
Nov. 30, 1889. D. Ballauf	3.00
Dec. 20, 1889. D. Ballauf	2.00
	37.00
Dec. 9, 1889. Baltimore and Potomac Railroad, freight	.25
Mar. 17, 1889. Baltimore and Potomac Railroad, freight	.25
	.50
Filtering tiles and cylinders:	
Dec. 9, 1889. Edwin Bennett	31.50
Mar. 8, 1890. Edwin Bennett	6.30
Mar. 24, 1890. Edwin Bennett	4.20
Apr. 23, 1890. Edwin Bennett	12.60
	54.60
Dec. 31, 1889. E. N. Gray & Co	2.50
Dec. 12, 1889. G. J. Heady, freight.....5.....	.25
Dec. 28, 1889. John J. Healy, freight	.25
Dec. 28, 1889. John J. Healy, freight	.25
	.50
Feb. 10, 1890. George W. Knox, freight.....	.25
Castings, pipes, and fittings for filters and for manufacture of filters:	
June 25, 1889. Robert Leitch & Sons.....	12.90
Aug. 28, 1889. Robert Leitch & Sons.....	.65
Sept. 21, 1889. Robert Leitch & Sons.....	.70
Apr. 1, 1890. Robert Leitch & Sons.....	22.76
June 24, 1890. Robert Leitch & Sons.....	42.59
	79.60
May 15, 1889. Melville Lindsey.....	1.20
May 6, 1889. F. P. May.....	3.20

Glass cylinders for filters:

Dec. 7, 1889. Whitall Tatum & Co.....	\$9.00
Dec. 12, 1889. Whitall Tatum & Co.....	8.15
Dec. 27, 1889. Whitall Tatum & Co.....	7.59
Jan. 11, 1890. Whitall Tatum & Co.....	.50
Apr. 9, 1890. Whitall Tatum & Co.....	3.50
	\$28.74
Total.....	208.59

The WITNESS. At the request of Mr. E. M. Robinson, the superintendent of the Leadville station, I respectfully submit his own affidavit and other affidavits relating to himself personally and the character and the quality of his administration of the work since he has been in the Commission.

The affidavits are as follows:

GLOUCESTER, MASS., *July 7, 1890.*

Having been an employé under Mr. E. M. Robinson as superintendent of the cod-fish hatchery at Ten-Pound Island station, in 1888 and 1889, I hereby testify that his strict attention to business and his gentlemanly manner and impartial enforcement of duties won for him the friendship and esteem of all connected with the work.

E. F. LOCKE.

JULY 7, 1890.

MASS., *Essex, ss:*

Sworn before me.

[SEAL.]

AARON PARSONS,
N. P.

CAPE ANN NAT'L BANK,
Gloucester, Mass., July 7, 1890.

This is to certify that, having made the acquaintance of Mr. E. M. Robinson, of the U. S. Fish Commission, at the beginning of his service in this city, I am very glad to say that he won and held my esteem by his true worth and character as a gentleman, and I feel that his enthusiasm for, and faithful attention to, his work, were a credit and an honor to the Commission, as well as to himself.

For these reasons, I may be allowed to add, I still regard his transfer to another field as a personal loss to me.

HIRAM RICH.

GLOUCESTER, *July 7, 1890.*

COMMONWEALTH OF MASSACHUSETTS, *Essex County, ss:*

Then personally appeared the above subscribed Hiram Rich and made solemn oath to the truth of the foregoing affidavit. Before me,

[SEAL]

SUMNER D. YORK,
Notary Public.

LEADVILLE, COLORADO, *June 27th, 1890.*

Mr. Robinson, the superintendent of the U. S. Fish Commission station at this place, I know to be a man of good habits, sober, and industrious, kind and attentive; and too, one of capabilities. I have been at work with him now for six weeks. Since my stay here I have never seen him under the influence of whisky or any intoxicating drinks, but always prompt and on duty from 7 a. m. until 6 p. m.

M. E. STID.

Subscribed and sworn to before me this 28th day of June, A. D. 1890.

[SEAL.]

OLIVER ADAMS,
Notary Public, Lake County, Colorado.

My coms. expires Aug. 10th, 1892.

LEADVILLE, COLORADO, *June, 28, 1890.**To whom it may concern:*

This is to certify that I consider Mr. E. M. Robinson, the present superintendent of the Colorado Fish Hatchery, a competent and efficient man who thoroughly understands the business of fish culture, and further as a man who attends personally to his work and labors as hard as any of his men under him.

J. H. HUNT,
Proprietor Evergreen Lakes Hotel.

LEADVILLE, COLO., *June 27, 1890.*

The statement made in the New York World of June 19, '90, by Mr. W. H. Bright, while before the investigating committee appointed to investigate the workings of the U. S. Fish Commission, against E. M. Robinson, the present superintendent of the Fish Commission station at or near Leadville, Colorado, is I know to be false. I have been employed by the Commission since Mr. W. H. Bright came here to work, and do swear that he was treated as a gentleman by Mr. Robinson and favored on account of his age. As to the occurrence of the loss of fish which he says was the most of a year's work, I know this to be false, as not over 15,000 were lost, and the station then had on hand 297,000; the loss was caused entirely by Mr. Bright's negligence. Mr. Robinson and myself were at work on a cabin the very day the accident occurred, May 9, 1890. Mr. Robinson reprimanded him on his return for not keeping his promise, and said to him that this accident was the result of his negligence.

Mr. Bright then cursed and swore at Mr. R., calling him and the Commissioner all kinds of dirty names; therefore I know his entire statement to be an untruth. The superintendent, Mr. Robinson, is, in my opinion, a capable, energetic, and competent man, sober, upright, and attentive to his duties. I have never seen or known him to be absent from the station more than a day, and then in all cases on business. Neither have I ever seen him under the influence of whisky while on duty or during business hours. He could not even be called a drinking man, but takes a drink when he feels so disposed. I am of the opinion that on Mr. Bright's return from town on the 9th of May that he was himself drunk, or talked like one drunk or crazy. Since writing this I remember that Mr. Robinson was absent in Denver two days, but this was before Mr. Bright reported here, and he was there on account of sickness.

J. MARTIN.

Subscribed and sworn to before me this 28th day of June, A. D. 1890.

[SEAL.]

OLIVER ADAMS,
Notary Public, Lake County, Colorado.

My commission expires August 10th, 1892.

The WITNESS. Three of these men are reputable men of Colorado, and are in the vicinity of the station, and have testified exactly opposite to Bright, and here is Robinson's own testimony, which is very interesting. It gives an account of the way Bright carried on out there and all about it:

LEADVILLE, COLORADO, *June 30th, 1890.*

Hon. M. McDONALD,
Commissioner of Fish and Fisheries, Washington, D. C. :

In justice to myself and in denial of the testimony given by Mr. William H. Bright before the Senate investigating committee, and which was published in the New York World of June 19th, 1890. I wish to furnish this as a sworn statement that Mr. William H. Bright, in his entire testimony, has sworn falsely, if the New York World has reported him correctly. I send with this same sworn evidence, that will go to prove what he says to be a falsehood. This evidence is given by Mr. J. Martin, an employé, and one who has been on the work before and since Mr. Bright reported for duty. Also, you will find a sworn statement given by Mr. M. E. Stid, which, too, goes to prove that I am not what Mr. Bright would have the committee and world to believe. Mr. J. H. Hunt, proprietor of the Evergreen Lakes Hotel, and a near neighbor, has given me a certificate, which accompanies this statement.

Mr. Bright says, "that I was in the habit of going to town with Mr. C. C. Lewis and getting on protracted sprees and totally neglecting my duties for three days at a time," every word of which is false. I never was in Leadville with Mr. Lewis but once, and I never took a drink with him in my life, but whenever I feel disposed to take a glass of whisky or beer I do so. I have never been drunk on duty at this

station. I was on two occasions, one might say, under the influence of beer while Mr. Bright was stationed here, but this was after 6 or 7 p. m., and did not cause me to lose any time, neither was my work neglected, nor was I enough so that I could not attend to my duties, and on each of these two occasions I did errands for Mr. Bright, bought provisions, delivered messages, brought his mail out, and on my return gave him his proper change, so I could not have been *very* drunk.

Mr. Bright further states, "that through my negligence and drunkenness, that our station sustained a loss of fish that represented a year's work." As near as I can estimate, the number lost was 15,000, and at the time we had on hand 297,000. A full account of this will be found appended, which I made to you on May 10, 1890, and which was the cause of Mr. Bright's discharge. This report is an exact copy from my letter-book. As to the conversation between Mr. Lewis and Mr. Bright, I can say nothing, but I believe this statement to be as false as I know the others to be. Mr. Bright again says, "that I go to bed with a big jug of whisky and remain there until whisky is gone, and effects slept off." Therefore, I say that this man Bright has lied and has committed perjury. He says that "he was glad to get away, and had complained to nobody." Mr. Bright complained to Dr. John Law of his treatment and Mrs. Bright said to Mrs. Cavanaugh, a near neighbor, that they hoped to live long enough to have their revenge.

Mr. Bright reported to me for duty the latter part of Jan'y, '90. He was treated on all occasions with considerate respect, and favored on account of his advanced years; I myself brought water and carried wood for Mrs. Bright after our day's work was finished, in order to assist both of them in any way I could and save Mr. Bright this additional labor. He was given the easiest work at the sta., but like all others required to be prompt on duty. He was allowed more time and was absent from the station on leave more than any man here. From time to time Mr. Bright said that Col. John Gay, inspector of stations, he believed was bribed by Col. R. E. Goodell, P. M., and Dr. John Law, a physician of this town and too interested in fish culture to locate the station here. Senator Teller was accused by Mr. Bright of sending him out here for political purposes; he stated to me that Mr. Teller sent him here to secure his re-election to the Senate during the next campaign and also intimated to my men on the quiet that after the November election he would receive the appointment as superintendent of this sta., in payment for services rendered to Mr. Teller.

Mr. Bright said to me more than once, "Do all the superintendents work like you do, and if I were superintendent of a station I'll be damned if I would." Then he said: "Do you know that ability and industry do not go for anything in any of the Government works?" He said that he refused work in one of the Govt. Departments (I think the Printing Office) that would have paid him \$6 per day, in order to come out here and assist in Mr. Teller's re-election as he was one of the few that could carry this part of the State Republican. My absence from the station in each case, but twice, was on business. In Jan'y I went to Denver, Colo., for two days as I was sick and thought the change would do me good. The other time was when my wife arrived, and then I stayed over in town one night.

Mr. Bright is, in my opinion, a foul-tongued slanderer, the most worthless, unpleasant, blasphemous, and wicked man that I have ever been associated with. He defies all Christianity, and said "he was not afraid of Colonel McDonald or any other damned colonel; that he, Bright, had as his backing, the order of Knight Templars, Grand Army Post, the Republican party, and the U. S. Senate, and why should he be afraid of the Commissioner, for he, Bright, could grace that chair with as much dignity as Colonel McDonald." Mr. Bright, nor any other man can truthfully bring any charges against me, and the way in which I conduct the working of the station that will injure my character in any shape or form. I have written this lengthy statement to show in part the kind of a man that I was so unfortunate as to be associated with.

I am, very respectfully,

E. M. ROBINSON,
Supt. of Leadville, Colo., Station.

STATE OF COLORADO, *County of Lake, ss:*

Subscribed and sworn to before me this 30th day of June, 1890.

[SEAL.]

WILLIAM H. NASH,
Notary Public.

Commission expires April 14th, 1891.

I will add, further, that I have intimate personal knowledge of Mr. Robinson's character, of his attainments and qualifications in fish cultural work; that I consider him, so far as experience and capability to meet emergencies go, fully the equal of any superintendent we have. He has always been distinguished in his work by his self-consecration and utter fidelity to whatever was put in his charge. He is one of the

best men I know. He may have gotten tight once or twice. I think it is very possible that when a man gets 2 miles above the level of the sea, in a climate like that of Colorado, he may become somewhat demoralized.

Mr. Moore in his testimony, as I understand, being asked as to the Colorado station expressed his opinion that it was too far from the railroad. In reply I respectfully beg to state that Mr. Moore's experience in the Commission does not relate to fish culture at all, that he has not by knowledge or relation been in a position to determine what is proper or best either regarding the establishment or development of a station. His function is and his experience has been to take charge of fish as hatched, and plant them in waters as instructed. As a matter of fact the station instead of being 6 miles from the railroad is about 3. Outside of that the question of the convenience to a railroad is one of the minor questions connected with the establishment of a station. You must first of all go where you can secure an abundant water supply. If you can secure an abundant water supply by gravity instead of pumping you have at once eliminated an annual cost of \$1,500 in the administration of your station.

By the CHAIRMAN:

Q. That was kept in view in the location of this station?—A. Yes, sir, and it is always kept in view. Considering all the conditions I think the Leadville station is equal in all respects to any station we have.

Q. Have you seen the Leadville station since it was completed?—A. It is not completed yet.

Q. Will it be completed inside of the appropriation?—A. We were required to meet the necessities of the case. I took a part of that appropriation and put up an auxiliary building, which was to serve when the station was completed as a nursery for fish, and paid for it out of that appropriation, and consider it a part of the station.

Q. And you consider it a part of the station?—A. Yes, sir. That was done with the view of avoiding the loss of a year in the development of the station. It has involved, I think, possibly an expenditure in excess of appropriation of \$200 or \$300.

Q. Not more than that?—A. No, sir. These things are always looked after very carefully. I may state further that 20 per cent. of the amount of the contract is still in reserve and will not be paid to the contractor until the building is duly inspected and accepted, and if there be defects in it the contractors will be required to make them good, and when the building is completed in accordance with the plans and specifications it will be one of the very best buildings of the kind I know of, either in this country or anywhere else. It is a splendid building. I have prepared a brief description of the Colorado station.

COLORADO STATION.

Location.—After a thorough investigation, the location of the Colorado Station was selected in Lake County, near Evergreen Lakes, and about 6 miles west of the city of Leadville.

Reservation.—The Government reservation for the use of the U. S. Fish Commission was created by proclamation of President Harrison, dated April 16, 1889, and consists of 1,935 acres, beginning on the western edge of the Arkansas Valley, and extending to the top of Mount Massive, 14,298 feet above tide-water, so as to include the source of

Rock Creek, which is apparently the remains of a glacier, and the largest permanent ice and snow field in Colorado.

Construction.—In order that no time should be lost, it was deemed advisable to erect a temporary hatchery to be used pending the construction of the permanent hatchery, and the work of constructing flumes (741 feet) to bring the water supply by gravity from two springs on the hill-side to the hatchery was begun September 9, 1889, and the temporary structure was ready for the reception of eggs about the middle of October. In the mean time, eight thousand brook-trout, suitable for spawning purposes, were, by permission of Dr. Law, collected from Evergreen Lakes and held in ponds; from these fish, 568,000 eggs were taken and placed in the hatching-troughs. This temporary hatchery will be useful as a nursery for fry when the station is permanently established.

Appropriations.—Fifteen thousand dollars was appropriated by Congress, and approved March 2, 1889, for the purpose of erecting a hatchery building.

Bids.—Proposals for constructing the hatchery building were invited by advertisements, published in Leadville and Denver papers, in July, 1889, but as only one bid was received, and it being for a sum about equal to the amount appropriated by Congress, it could not be considered, and proposals were advertised for a second time. When the proposals were opened at Washington, D. C., September 20, 1889, Lyman G. Hunt, of Pueblo, Colo., was found to be the lowest bidder, and the contract was awarded him in accordance with his bid, which was \$12,672.

The location of the hatchery was made by the Commissioner after a thorough and careful examination of the ground and consideration of the conditions to be fulfilled in the economical and effective development of the work of trout breeding and rearing assigned to the station.

The plans for the hatchery were matured by the present Commissioner and are based upon his experience and knowledge of the requirements of fish-cultural work and the particular conditions to be fulfilled in this case. The detailed plans and specifications, under which the contract for the hatchery building is now being executed, are based upon his studies and were prepared under his direction by C. E. Gorham. (Copies of plans, specifications, etc., are herewith submitted.)

The building is now substantially completed. The plastering and other parts of the interior finish were suspended during the winter, and an extension of time granted the contractor, in order that the remaining work might be done when there was no risk of damage or deterioration by freezing. The work so far has been well done and in strict accordance with the specifications; 20 per cent. of the contract price has been retained in the hands of the disbursing officer of the Commission as security for the faithful completion of the contract.

Moreover the bondsmen of Mr. Hunt are responsible and liable for any failure on the part of the contractor. The Government is fully protected in every way. The hatchery when completed will be one of the most substantial and carefully constructed buildings in Colorado, and will be one of the best equipped and most extensive trout-breeding establishments in the world.

Extract from "Report of Explorations in Colorado and Utah during the summer of 1889,"
by David Starr Jordan.

B. Arkansas Basin.—The Arkansas River rises in the mountains to the north of Leadville. It flows southward through a broad park-like valley, grassy in its upper part, and becoming arid lower down. This valley is bounded on either side by lofty mountains, with snow-banks which are the source of many ice-cold streams. At

Salida the river turns abruptly to the east, breaking through the mountains in a deep and rocky cañon, by which it reaches the level of the sage plains. Throughout the region above the cañon the Arkansas is clear and cold, in every way well suited for trout. Placer mining at Leadville and Granite has much reduced the number of fishes in the river by filling the waters with clay, but they still abound in all the tributary streams. Below the cañon the river becomes warmer and more muddy, and no trout are found there, the fauna from Cañon City down being much the same as that of the rivers of Kansas. The fishes of the Arkansas were examined at the following points:

1. *Arkansas River and its Lake Fork near Leadville.*—Seined at a bridge across Lake Fork between Evergreen Lakes and the village of Malta, about 3 miles west of Leadville. The river and the Lake Fork are about equal in size and entirely similar in character, flowing with a moderate current through green meadows, shaded by willows, and with occasional deep holes in the bends. The streams are each about 15 feet wide and the bottom is gravelly. The temperature is about 62 degrees. These streams are ideal trout brooks. Trout are very abundant, and with them *Rhinichthys dulcis*. Species taken at Leadville are marked L in the following list.

2. *The Evergreen Lakes* are a series of trout ponds, wholly or partly artificial, fed by cold streams from the flanks of Mount Massive. One of these streams, having its rise in the largest permanent snow-field in Colorado, has been chosen by the U. S. Fish Commission as the site of its hatchery. No better location could be desired.

At 12 o'clock m. the subcommittee adjourned to meet at the call of the chairman.

AUGUST 21, 1890.

The subcommittee met at 10 o'clock a. m., pursuant to the call of the chairman. Present, Senators Stockbridge (chairman) and Squire.

TESTIMONY OF J. J. O'CONNOR.

J. J. O'CONNOR, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Please state your full name.—A. J. J. O'Connor.

Q. Are you in the employ of the U. S. Fish Commission?—A. I am.

Q. What are your duties?—A. I am chief clerk of the Fish Commission. I have the general supervision of the clerks and the official correspondence of the Commission, the transmission of the mails of the Commissioner's office, and the assignment of the major portion of the correspondence to the different officers and divisions of the Commission for reply or other necessary action; the indexing and registering of the correspondence of the Commission, and the custody of the records in charge of the record clerk under my direction; the purchase and use of stationery and the distribution of the publications of the Commission, the preparation of replies to all routine letters for the signature of the Commissioner, and the approval, under the direction of the Commissioner, of all requisitions of a routine character for the purchase of supplies, and for services, etc.

Q. When were you first employed in the service of the Commission?—

A. I was appointed in May, 1880, by Professor Baird.

Q. In what capacity?—A. As stenographer and clerk to Major Ferguson, who was afterwards assistant commissioner. I was paid folio rates; that is, at the rate of 10 cents per hundred words. In January, 1881, I was appointed clerk at \$75 per month, and continued at that compensation until January, 1882, when I resigned to accept a position as clerk and stenographer to the Committee on Education and Labor of the House. I continued to do piece-work, however, for the Commission, for some time after I resigned. I did that at the request of Major

Ferguson, the assistant commissioner. In November, 1882, I was assigned to duty as stenographer to Colonel McDonald, working at folio rates, viz, at 10 cents per hundred words. In July, 1883, I was again regularly appointed as clerk, at \$100 per month, under Professor Baird. In July, 1885, my compensation was increased to \$115 per month, and in December, 1887, while Mr. Goode was Commissioner, my salary was increased to \$150 per month.

Q. What was your compensation immediately before Colonel McDonald became Commissioner?—A. Eighteen hundred dollars per year.

Q. What is your present compensation?—A. Twenty-four hundred dollars a year.

Q. It was increased by Commissioner McDonald?—A. Yes, sir; the last increase.

Q. Were your duties increased?—A. I was appointed chief clerk in July, 1888.

Q. By whom?—A. By Commissioner McDonald, at \$183.33 per month, or \$2,200 per year. In August, 1889, my compensation was increased to \$2,400 per annum, which would be justified, I should say, by the fact that all of the correspondence, the archives of the Commission, were transferred to my office.

Q. At the time of the increase?—A. Yes, sir.

Q. Your duties were increased?—A. Yes, sir.

Q. Your duties and responsibilities were increased?—A. Yes, sir; both were increased.

Q. Mr. Smiley has stated, in regard to the transfer of a portion of his work to other persons, that at no time did the Commissioner make any complaint or find any fault with the work he did, barring one particular time, which he explained, viz, that the annual report for 1886 which he prepared was too voluminous, and that the Commissioner would not accept it for that reason. Can you give us any information on that point?—A. In reference to that specific report I would say that the statements already submitted by the Commissioner fully cover the point. Now I desire to say, in addition to that, that complaints were very general on the part of those who contributed material for publication in the Fish Commission bulletins and reports at the manner in which Mr. Smiley garbled their material. Several of them stated to me that the reports were so badly garbled by Mr. Smiley that the sense intended to be conveyed was entirely destroyed; and in other cases where scientific papers were submitted by those who were competent to write them the complaints were almost universal. Complaints were also being constantly made against Mr. Smiley by clerks and others in the office, because they were not able to procure from his office information which they desired and which it was necessary that they should have in the conduct of their work. He either could not, or would not, furnish the information, and I can say in reference to the Commissioner's office that repeated requests were made of Mr. Smiley for information from the records before they were transferred from his office, which information he did not give, or when he did give it it was frequently after the time when we could use it.

Q. It has been stated by Mr. Smiley that he never complained of overwork in his life, although he had worked twelve and fifteen hours a day; that he sought his present position in order that he might work more than the regular hours a day. What have you to say in reference to that statement?—A. That is exactly the opposite of what he said to me soon after Colonel McDonald became Commissioner.

Q. Did he state to you that he thought his work was too hard?—A.

No, sir. He stated to me at the former office of the Fish Commission at 1443 Massachusetts avenue, that he did not propose to work over office hours in the future; that he had done so under Professor Baird, but he did not intend to do so any longer. In his letter to Commissioner McDonald, dated January 8, 1889, he makes the following statement:

You are also aware that, under Professor Baird's administration, I did a great deal of work myself out of office hours, working after 4 o'clock, evenings, and even on Sundays. The latter course I discontinued, however, some time ago, hence the available force is now almost one-half what it was formerly.

The letter is as follows:

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., January 8, 1889.

DEAR SIR: In response to your requests of January 2 and 4, I hand you certain memoranda (five pages) containing the information, and should, perhaps, remind you that the work of this office has been seriously interrupted (so far as the publications are concerned) during the past eighteen months by the various changes and uncertainties, and that *the personnel has been correspondingly decreased*. Eighteen months ago the force consisted of eight: Messrs. Latimer, Parker, Stoerzer, Miss Rockwell Messrs. Jerrell, Scudder, Gillis, and Kimball, the first four of whom now remain, and the last four of whom have been transferred or resigned without their places being filled. You are also aware that under Professor Baird's administration I did a great deal of work myself out of office hours, working after 4 o'clock evenings, and even on Sundays. The latter course I discontinued, however, some time ago. Hence the available force is now about one-half what it was formerly.

Respectfully,

CHAS. W. SMILEY.

Col. M. McDONALD,
Commissioner.

Office of Records: Duties of personnel (as constituted January 7, 1889).

C. W. Smiley.—To direct the work; to determine the details of all expenditures authorized by the Commissioner, to keep the records thereof; to be responsible for the character and amount of all stationery and printing received; to examine all accessions to the library, all periodicals, etc., with the view to their acknowledgment and disposition, to maintenance of series, etc; to assist the Commissioner in determining the issue of Fish Commission publications, prepare letters, etc.

C. E. Latimer.—To make synopses of the *important* letters received; to keep the record of all stationery received and issued, and to make inventories of stock periodically; to make out orders, labels, receipts, and envelopes for the issue of books from the armory, and to keep the record thereof; to make periodically inventories of the stock on hand; to catalogue the books and pamphlets received in the library, to charge and credit loans of book; so stamp foreign letters, bulletin signatures, library acknowledgments, and keep a record of the same.

H. P. Parker.—To index all letters received and written, and to search the files in response to all requests for letters and information. (This is the duty upon which Mr. Scudder has recently been engaged, it occupying about two-thirds of his time.) To make copies, write letters, etc., from dictation, upon the typewriter as needed in the work of the chief of the office.

Miss Rockwell.—To make synopses of all letters written, of the unimportant letters received; to record all letters in the registers, both written and received, by name, date, number, and synopses of contents.

A. J. Stoerzer.—To assort and put into files, letters, requisitions, orders, and periodicals; to put up packages of stationery; to make trips to stationery stores, armory, printing office; to have the care of pamphlets in stock, put them up for mailing as ordered; to wrap books and other matter; to assist in putting up the regular and other issues of bulletin signatures.

All.—To co-operate in special jobs, to do the work of each other when sick, absent on leave, etc.

Uses for a typewriting machine.

- (1) The preparation of lists of accessions to library.
- (2) The preparation of addresses in triplicate of all persons to whom reports and bulletins are sent, this in a regular sending amounting to nearly 1,000 items.

(3) The preparation of letters for the Commissioner and in carrying on the work of the office.

(4) An aid to any work in which the chief is engaged outside of ordinary routine, particularly if the digest of publications in libraries of the United States is continued.

(5) There are miscellaneous uses for the machine every day as an aid to the work of the office.

Memorandum of work pending in the office of records, in addition to the usual routine.

(1) Paper on Fish Commission publications in libraries, per memorandum herewith.

(2) An effort to collect the reports of all the State fish commissions which have been published during the past three or four years, very few of which were received at the time.

(3) Correspondence with the scientific societies of the United States for the purpose of determining to what extent their publications can be secured for the Fish Commission, and to what extent they have or can be supplied with our publications.

(4) The preparation of a book of railroad circulars for 1889. There are two ways of doing this: the one involving printing and binding at a cost of \$75 to \$100; the other by certain clerical work to avoid much if any outside expense. Mr. Moore and myself have determined that the latter is the wiser course to pursue.

Memorandum of a plan looking to the increased usefulness of the Fish Commission publications.

This plan was approved in the main by the Commissioner in June last, and much has been done toward its completion.

1. It was proposed (1) to ascertain what publications of the Fish Commission were contained in all the important libraries of the United States; (2) so far as practicable to fill up gaps in important series; (3) to publish in the Commissioner's report, and also in pamphlet form, a list of such libraries, with a statement of what is contained in each.

2. Returns have thus far been obtained from more than 1,300 libraries, and efforts are now being made to secure returns from a few large or important libraries that have thus far failed to respond.

3. The information, so far as received, has been tabulated, and constitutes a very valuable paper. The transfer of duplicate volumes from libraries that have them to libraries not having them has been arranged for and largely accomplished. Some cases still require correspondence. During the summer there were sent from the Commission's stock to libraries most needing them a lot of books such as could be most easily spared.

4. It remains to prepare for the approval of the Commissioner a list of sendings which would complete series in important libraries still unsupplied. When the last sending has been determined and the remaining returns are in, the paper can be completed and handed in for publication.

5. The pamphlet copies of this paper having been secured, it will be possible to mail it to miscellaneous applicants for publications, whose number will be considerable when a new volume shall have been issued, but of whom there have not been very many the past twelve months, owing to the fact that the Commission has published no volumes of annual reports or bulletins for nearly two years.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., January 5, 1889.

DEAR SIR: In reply to yours of January 4th, I beg to say that the instructions embodied in my letter of August 27th, from Wood's Holl, and relating to the preparation of digest of progress, are not modified or superseded by the new assignment of duties made in connection with the publications of the Commission.

Very respectfully,

M. McDONALD,
Commissioner.

C. W. SMILEY, Esq.

(On the margin of above letter:) Col. M.: This did not reach me until the p. m. of January 8. Meantime my report was made (of duties), which did not include this work. In considering the report allowance should be made for this.

C. W. S.

The WITNESS. I mention this simply to show the inconsistency on the part of Mr. Smiley. He states in this letter that he does not propose that he will work that number of hours again, while the other statement is just the opposite.

Q. Mr. Smiley also stated that Mr. Baird was a strong man and Mr. McDonald is a weak man. He means physically, of course.—A. He means otherwise.

Q. Did Mr. Smiley ever speak to you on this subject.—A. As showing how Mr. Smiley has been disposed to every Commissioner of Fisheries we have had, I will state that shortly after Colonel McDonald became Commissioner, Mr. Smiley stated to me, in speaking of the comparative qualifications and qualities of the previous Commissioners, that Professor Baird was a double-faced man and a liar, and that as for Professor Goode if he could ever do him a turn it would be to stab him in the back. I mention that matter as showing what has been the disposition of Mr. Smiley towards his superior officers, and that Mr. McDonald is no exception from the remarks which he has been in the habit of making, and I would say further, that Professor Baird and Mr. Goode, to the best of my knowledge and belief, had Mr. Smiley "placed," brought him out. What I mean to say is that at Professor Goode's recommendation he was appointed by Professor Baird in the Fish Commission.

Q. And he was still in the habit of speaking disrespectfully and disparagingly of Professor Goode as well as of Professor Baird?—A. Yes, sir.

Q. Is it a fact that Mr. McDonald has been in a state of continued nervous prostration during the past two years, and that he has thereby been unfitted for the duties of his office?—A. I consider that that is a most malicious falsehood. Having been directly under Colonel McDonald for the past eight years or thereabouts, and having traveled with him for periods of from one to three months during that time, I can say from the best of my knowledge and belief and from my observation that Colonel McDonald has been in better health during the past three years than he had ever been prior to that time while I was acquainted with him.

Q. Since he has filled the office of Commissioner have you discovered any indications of nervous prostration and unfitness for business?—A. Never. I would like to add also that Colonel McDonald has frequently stated to me that he was enjoying better health—that he has enjoyed better health during the past two years than he had enjoyed for any previous period within his recollection.

Q. Is Colonel McDonald in the habit of scolding employés around him and using language unbecoming a public officer in enforcing discipline?—A. I never heard him use language unbecoming a public officer to any employé of the Commission.

Q. What have you to say in regard to the charge of laxity of discipline among the employés of the office? It has been charged that the discipline is very lax; that the employés came and went about as they pleased, and did not observe hours, and read newspapers and wasted their time. What have you to say with reference to that, so far as your own observation goes?—A. That is a matter which would come directly under my observation, and with which I feel that I am charged. I will read a circular order which was prepared in reference to that matter on June 25, 1888, circular order No. 19. Our circular orders are numbered consecutively. This order is as follows:

[No. 19.—Circular order.]

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., June 25, 1888.

Employés engaged in the performance of clerical or other duties in the offices of the Commission are hereby notified that the hours of duty will be from 9 a. m. to 4 p. m. of each working day, with thirty minutes intermission at noon. In granting leaves of absence assistants in charge of division, and others having the responsible direction of work, will be governed by paragraph 63 of Provisional Regulations. Leaves granted from time to time will be deducted from the regular annual leave of each employé. Notice in writing will be forwarded to the chief clerk in each instance at the time of the granting of such leaves.

M. McDONALD,
Commissioner.

Paragraph 63, to which reference is made, is as follows :

63. Assistants in charge of division, persons in charge of office, and superintendents of stations, are authorized to verbally grant leaves of absence not exceeding one day in duration to persons under their direction. They may also grant leaves of absence not exceeding two and one-half days in any calendar month, but will give the authority in writing and forward a copy to the Commissioner. Such leaves shall not be granted to the detriment of the work of the Commission, except in very urgent cases. All applications for leave exceeding two and one-half days at a time shall be referred to the Commissioner for his approval.

That covers the matter in reference to the——

Q. Has that order been obeyed as far as your knowledge goes?—A. Yes, sir ; when it is not obeyed I feel it my duty to inform the employé whether he be a clerk or other person, that he is not obeying. As in every Department it is necessary now and then to remind a clerk or other employé as to what the regulations are, and it has been necessary to remind two or three of our employés, and one of those is Mrs. Palmer, with reference to whom a statement was made in one of the newspapers that she was a pet. I will read the letter which was sent to her :

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., May 21, 1890.

MADAM : It has been brought to my attention that you have been repeatedly absent from your desk during office hours without permission. Absent from the office or from your desk, as you must be aware, is contrary to sections 61 and 62 of Provisional Regulations of the Commission, which are as follows :

"61. No employé shall absent himself from duty except on Sundays and legal holidays, without permission from his official superior. In case of sickness or unexpected detention notice must be promptly sent by the employé so detained to his superior, stating the cause and probable duration of his absence.

"62. Persons absent on account of sickness will furnish physicians' certificates or other evidence satisfactory to their official superiors that the absence is necessary."

Your attention is called to circular order No. 19, a copy of which is attached hereto.

Very respectfully,

M. McDONALD,
Commissioner.

Mrs. I. MCB. PALMER,
U. S. Fish Commission.

[No. 19. Circular order.]

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., June 25, 1888.

Employés engaged in the performance of clerical or other duties in the offices of the Commission are hereby notified that the hours of duty will be from 9 a. m. to 4 p. m. of each working day, with thirty minutes intermission at noon. In granting leaves of absence assistants in charge of division and others having the responsible direction of work will be governed by paragraph 63 of Provisional Regulations. Leaves granted from time to time will be deducted from the regular annual leave of each employé. Notice in writing will be forwarded to the chief clerk in each instance at the time of the granting of such leaves.

M. McDONALD,
Commissioner.

Q. What has been the effect of that letter?—A. The effect of that letter has been that we have not found it necessary since to remind Mrs. Palmer as to what the hours of duty are. Another employé to whom we found it necessary to forward a similar letter, or a little stronger one, was Mr. Frank Blaisdell, to whom we sent this letter on November 26, 1889:

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., November 26, 1889.

DEAR SIR: Your attention is respectfully called to Circular Order No. 19, of date June 25, 1888, which is as follows:

[No. 19. Circular order.]

“Employés engaged in the performance of clerical or other duties in the offices of the Commission, are hereby notified that the hours of duty will be from 9 a. m. to 4 p. m. of each working day, with thirty minutes intermission at noon. In granting leaves of absence assistants in charge of divisions, and others having the responsible direction of work will be governed by paragraph 63 of Provisional Regulations. Leaves of absence from time to time will be deducted from the regular annual leave of each employé. Notice in writing will be forwarded to the chief clerk in each instance at the time of the granting of such leaves.

“M. McDONALD,
“Commissioner.”

Very respectfully,

M. McDONALD,
Commissioner.

FRANK BLAISDELL, Esq.,
U. S. Fish Commission, Washington, D. C.
(Through Mr. Bayley.)

That letter, however, did not have the desired effect. Mr. Blaisdell continued to absent himself from the office without authority, and on February 5, 1890, the following letter was sent to him.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., February 5, 1890.

DEAR SIR: It has again been brought to my attention that, notwithstanding the notice sent you some time ago, you continue to absent yourself from the office of the Commission during business hours without permission. You are hereby notified that a repetition of this offense will be sufficient cause for your dismissal.

Very respectfully,

M. McDONALD,
Commissioner.

FRANK BLAISDELL, Esq.,
Engineer's Office, U. S. Fish Commission.
(Through Mr. Bayley.)

I will state that those letters were prepared by myself, of course for the signature of the Commissioner. Of course, you will understand that we have never considered it necessary to put a watch on any employé of the Commission unless we had very good reason to suppose there was something wrong.

Q. What was the effect of that letter? What was Mr. Blaisdell's course subsequent to that?—A. Subsequent to that he did better, so far as the observance of the office rules are concerned.

Q. Was he dismissed from the service soon after?—A. Yes, sir.

There is one letter I would like to introduce in reference to the questions in regard to Colonel McDonald's physical condition, and that is a letter which was written to Mr. Smiley on January 22, 1889, which is as follows:

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., January 22, 1889.

SIR: I do not consider it either necessary or desirable that the Commissioner should be informed of correspondence between yourself and other members of the Commission, unless such correspondence involves official cognizance and action.

The instructions already given by me, relative to the new assignment of duties in connection with the office of editor, are explicit and require no further interpretation. It is, however, necessary that they be complied with without reservation and in a spirit of accommodation and cheerful subordination to authority.

The Commissioner is glad to assure you that he does not consider his health in an imperfect or dangerous condition. He is fully equal to the discharge of all his official responsibilities, nor does he propose either to delegate them or permit their assumption by others.

In the interest of good administration he will insist upon proper subordination to authority. He will make such assignment of duties as the interests of the service require, and he will not permit any feeling of dissatisfaction with such assignments as may be made to manifest itself in efforts to embarrass administration.

The above remarks apply as well to your office as to others.

It is not proper that the time of the Commissioner, which is fully occupied with important duties of administration, should be occupied in settling misunderstandings and controversies upon trivial questions which should never arise if each would apply himself to the competent discharge of his own duties, and should be willing to concede to others the same conscientiousness in the discharge of his duties—the same diligence, intelligence, and integrity of purpose, that he claims for himself.

Very respectfully,

M. McDONALD,
United States Commissioner of Fisheries.

C. W. SMILEY,
Office of Records and Publications.

Mr. Smiley seemed to be very much troubled, unnecessarily, in reference to Colonel McDonald's health.

Q. Can you enlighten the committee in regard to the following statement of Mr. Smiley? Mr. Smiley stated, when he was before the commission, as follows:

I enjoy seeing the fruits of my work, and I can not spend my time, month after month and year after year, pottering in a fruitless way; and if I am handicapped by my superior officer and prevented from bringing forth fruit, I am likely to look where I can produce fruit.

Now, the question is, can you enlighten the committee in regard to that statement? Do you know anything about what he could have alluded to, or why he should have introduced that sort of a remark into his testimony?—A. In reference to that, I should say that there was an abundance of work in Mr. Smiley's office from which he could produce results—or fruit, as he terms it—if he desired to do so. In the first place, he was instructed to prepare a pamphlet in reference to the cultivation of carp and other pond fish, for which there has always been a very great demand. The prospectus for such a pamphlet was submitted by Mr. Smiley and approved by the Commissioner.

About six months after the authority had been given him to proceed with the preparation of that pamphlet, the Acting Commissioner during the absence of the Commissioner, who was then on the west coast, inquired of Mr. Smiley what progress he had made with this pamphlet. He replied then that it was not published and that it would be impossible for him to complete it. That was one matter from which he could have produced very good fruit. Another matter from which he might have produced fruit, to use his language, would have been to systematize the records, papers, publications, etc., in his office. Soon after Mr. Smiley's resignation from the Commission there was a committee appointed, consisting of Mr. Rathbun, Mr. Gill, and myself, to investigate the library. Press of other work was such as to prevent us from completing that work, but we made a sufficiently thorough examination or investigation to show that the papers, records, correspondence, etc., in the library were in a most confused and chaotic condition. I should say that Mr. Smiley ought to have attempted to produce some sort of fruit from that condition of affairs in his own office.

Q. You think if he was anxious for work there was plenty to be done in his office?—A. Yes, sir.

Q. Are there any specific reasons why the records of the Commission were transferred from Mr. Smiley?—A. The most important reason was the fact that the work in the Commissioner's office was greatly retarded and embarrassed on account of the delay frequently in receiving each day's mail from Mr. Smiley. This was before the records were transferred from Mr. Smiley. He had instructed his clerks, I was so informed when I made inquiry, not to send the mail to the Commissioner's office until he had read it, and as he invariably came late to the office during Colonel McDonald's administration, the mail, of course, was received in our office late. In addition to this reason we had always had a great deal of difficulty in getting information from Mr. Smiley's office in reference to matters of record.

Q. All these matters of record went to his office first?—A. Yes, sir; that was before the transfer, and I recommended on three or four occasions to the Commissioner in the interest of the public solely that the records be transferred from Mr. Smiley. I would say also that several other employes of the Commission made complaint in reference to the difficulty in getting information from the records.

Q. Was Mr. Smiley in the habit of absenting himself from the office during Colonel McDonald's administration?—A. Frequently when I had occasion to send for information from Mr. Smiley or Mr. Smiley's office, I was informed that he was not in the office. During that time he had charge of the editorial work, however, and there might have been occasion at times for him to be absent from the office; that is, to go to the Printing Office. His frequent absence, however, and apparent lack of interest in his work and the difficulty of obtaining information from his office, I would say were abundant reasons for making the transfer.

Q. Since the transfer of the editorial work and records from Mr. Smiley is it a fact that it has cost, as Mr. Smiley has stated, one-third more to do that work than before?—A. No, sir.

Q. Mr. Smiley has stated that since the transfer it has cost one-third more to do the work than under the administration of his office?—A. No, sir; that is not so. The Commissioner has shown by actual figures that it cost just one-third less, viz, that there is a saving since the transfer of about \$2,000 per annum.

Q. Is there any reason why Mr. Smiley could not have maintained the same discipline among his employes under Colonel McDonald as existed under Professor Baird?—A. None in the world if he had desired to do so.

Q. It was stated by Mr. Moore, the superintendent of distribution, that some of the shipments of shad fry that were turned over to the messengers in twenty cans during the past season contained one million four hundred and seventy-four thousand fry, and that in other cases a million and a half fry were placed in twenty cans. What have you to say in reference to this statement?—A. In reference to that statement I submit herewith the reports of the messengers who took out from the Central Station during the present season the shipments of shad for planting in the streams throughout the country; that is, they were streams not very remote as a rule from Washington. These reports show the condition of each shipment, the condition of the fish when planted, the percentage of loss, and the number planted. They also show the number originally given to each messenger.

In reference to the specific statement that one million four hundred and seventy-four thousand fry were put in twenty cans, the statement of the messenger who had charge of the shipments shows that they were taken in forty cans.

Q. In forty cans?—A. Yes, sir; in forty cans.

Q. This number in forty cans?—A. Yes, sir; instead of twenty cans. That would be a reasonable number to the can.

Q. Did you ever know of one million and a half being placed in twenty cans?—A. In the case of the shipment taken by Mr. Steuart, to Goldsborough, N. C., 80,000 were taken in one can as an experiment, and he so indicates on his report that it was an experiment, and he reports of that 80,000 that 60 per cent. were planted. That is, that there was a loss of 40 per cent.

Q. That was a larger shipment than was usual?—A. Yes, sir.

Q. And was done purely as an experiment?—A. Yes, sir.

Q. Do you consider the interest of the work of the Commission justified an experiment of that character?—A. Yes, sir.

Now, in another case 1,500,000 were taken in thirty cans, not in twenty cans, by J. E. Brown, messenger, to Laurel, Md., which is only half an hour's ride from Washington. In his report he states that they were planted in excellent condition, and without any loss whatever. That will be shown in that statement.

Q. Mr. Moore also stated that he had frequently protested against putting so many fry in a can, because he did not think it could be done. Did he ever make such protest to you or to any one in the Commission to your knowledge?—A. He never made any such statement to me, but the Commissioner informed me that he did refer to the fact that he thought too large a number was placed in the cans. In reference to that I will read the following letter from the superintendent of the Central Station:

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., May 6, 1890.

DEAR SIR: I respectfully report that Mr. Dana is keeping the records of shad-hatching in this station without variation from former seasons, and that each ticket shows in figures the number received and the number hatched. The losses in hatching are no greater than usual and rumors reaching you of 50 per cent. loss in the station are groundless, except in the case of a lot of eggs from Havre de Grace dropped here as a bad lot by one of the cars.

As regards shipping fish by the 70,000 or 80,000 to the can I have this to say: Mr. Moore requested 80,000 in one can for some purpose known to himself, and that a lot of 1,500,000 were sent to Laurel Station—only a thirty minute ride—in cans of 45,000 fry each. All other shipments have been normal. Mr. Dana informs me that he has fully explained these matters to you since you expressed your dissatisfaction on Saturday.

The reports which reached you appear to be sensational and libellous.

I am yours, truly,

S. G. WORTH,
Superintendent Central Station, corner of Sixth and B streets southwest.

Hon. M. McDONALD,
Commissioner.

Q. What is the usual number of shad fry placed in a can?—A. About 25,000.

Q. Can a greater number be taken with safety on short trips?—A. Yes, sir; as is shown by the statement of Mr. Brown of a shipment of one million and a half taken to Laurel, and it is done frequently on short shipments.

CENTRAL STATION, *May 2, 1890.*

In compliance with instructions received from headquarters U. S. Fish Commission, I have this day forwarded by J. E. Brown, to Meherring River, Virginia, 1,474,000 shad fry.

Shipment put up in forty cans.

RICHARD DANA,
Expert Fishculturist.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
May 2, 1890.

Report of shad fry distributed by J. E. Brown.

Date of receipt: May 1, 3 p. m.

Whence received: Central Station, Washington, D. C.

Number of shad fry: 1,474,000.

Date of departure from Baltimore and Potomac depot: 4.55 p. m.

Disposition of: Appomattox River, near Petersburg, Va., and Stony Creek, at Stony Creek, Va.

Date of deposit: May 2, 6 a. m.

Nearest railroad town to place of deposit: Petersburg, Va., and Stony Creek, Va.

Condition of fry when deposited: Fair.

Loss of fry in transit: 10 per cent.

Date of arrival at Central Station on return: 11.55 p. m., May 2.

Remarks: Fish were very much crowded in cans, and a good deal of dirt and shells put up with them; was on a freight train from Richmond to Stony Creek, and deposited some of the fish in the Appomattox, at Petersburg.

J. E. BROWN,
Messenger.

(Miles, 320.)

Deposits.

Stream.	Point of deposit.	No. planted.	Condition.	Date of deposit.
Appomattox.....	Petersburgh, Va.....	326,600	Fair	May 2, 6 a. m.
Stony Creek.....	Stony Creek, Va.....	1,000,000	..do	May 2, 8.30 a. m.

CENTRAL STATION, *May 2, 1890.*

In compliance with instructions received from headquarters U. S. Fish Commission, I have this day forwarded by Augustus Steuart, messenger, to Neuse River at Goldsborough, N. C., 994,000 shad fry.

RICHARD DANA,
Expert Fishculturist.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
May 3, 1890.

Report of shad distributed by C. A. Steuart.

Date of receipt: May 2, 1890.

Whence received: Central Station.

Number of shad: 994,000.

Date of departure from Washington, D. C.: May 2.

Disposition of shad: Neuse River, North Carolina.

Date of deposit: May 2, 1890.

Nearest railroad town to place of deposit: Goldsborough, N. C.

Condition of shad when deposited: Fair.

Loss of shad in transit: 41,940.

Date of arrival at Washington, D. C., on return: May 3, 1890.

Remarks: Loss on one can containing 80,000 as an experiment, 40 per cent; loss on nineteen cans containing 914,000, 10 per cent.

C. A. STEUART,
Messenger.

(Miles, 554.)

CENTRAL STATION, *Sunday, May 4, 1890.*

In compliance with instructions received from headquarters U. S. Fish Commission, I have this day forwarded by J. E. Brown, messenger, to Laurel, Md., 1,500,000 shad fry for deposit in Patuxent River.

Shipment in thirty cans.

RICHARD DANA.
Expert Fishculturist.

U. S. FISH COMMISSION,
Washington, D. C.

MESSANGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
May 4, 1890.

Report of shad fry distributed by J. E. Brown.

Date of receipt: May 4, 11.45 a. m.

Whence received: Central Station, Washington, D. C.

Number of shad fry: 1,500,000.

Date of departure from Baltimore and Ohio depot: 1.15 p. m., May 4, 1890.

Disposition of fry: Deposited in Patuxent River, at Laurel, Md.

Date of deposit: 2.45 p. m., May 4.

Nearest railroad town to place of deposit: Laurel, Md.

Condition of fry when deposited: Excellent.

Loss of fry in transit: —.

Date of arrival at Central Station on return: 6.45 p. m., May 4.

J. E. BROWN,
Messenger.

(Miles, 36.)

Deposits.

Stream.	Point of deposit.	No. planted.	Condition.	Date of deposit.
Patuxent River.....	Laurel, Md	1, 500, 000	Good	May 4, 2.45 p. m.

CENTRAL STATION, *May 5, 1890.*

In compliance with instructions received from headquarters U. S. Fish Commission, I have this day forwarded by J. E. Brown, messenger, to Mehering River, at Bellefield, Va., 600,000 shad fry, in twenty cans.

RICHARD DANA,
Expert Fishculturist.

U. S. FISH COMMISSION,
Washington, D. C.

MESSANGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
May 5, 1890.

Report of shad fry distributed by J. E. Brown.

Date of receipt: May 5, 10 a. m.

Whence received: Central Station.

Number of shad fry: 600,000.

Date of departure from Baltimore and Potomac depot: 10.57 a. m., May 5, 1890.

Disposition of fry: Deposited in Mehering River.

Date of deposit: 6.45 p. m., May 5, 1890.

Nearest railroad town to place of deposit: Bellefield, Va.

Condition of fry when deposited: Good.

Loss of fry in transit: 5 per cent.

Date of arrival at Central Station on return: 11 p. m., May 6.

J. E. BROWN,
Messenger.

(Miles, 360.)

Deposits.

Stream.	Point of deposit.	No. planted.	Condition.	Date of deposit.
Mehering River.....	Bellefield, Va.	570, 000	Good	6.45 p. m., May 5.

CENTRAL STATION, *May 12, 1890.*

In compliance with instructions received from headquarters, U. S. Commission, I have this day forwarded by J. E. Brown, messenger, Rappahannock River, at Fredricksburg, Va., 498,000 shad fry in sixteen cans.

RICHARD DANA,
Expert Fish Culturist.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
May 12, 1890.

Report of shad fry distributed by J. E. Brown.

Date of receipt: 10 a. m., May 12.

Whence received: Central Station.

Number of shad fry: 498,000.

Date of departure from Baltimore and Potomac depot, 10.57 a. m.

Disposition of: Deposited in Rappahannock River.

Date of deposit: 1.30 p. m., May 15.

Nearest railroad town to place of deposit: Fredricksburgh, Va.

Condition of fry when deposited: Poor.

Loss of fry in transit: 10 per cent.

Date of arrival at Central Station on return: 4.20 p. m., May 12.

Remarks: This was a very poor lot of fish when received; it was the bottom of the aquaries and they were dirty and weak.

J. E. BROWN,
Messenger.

(Miles, 106.)

Deposits.

Stream.	Point of Deposit.	No. planted.	Condition.	Date of Deposit.
Rappahannock River.....	Fredericksburgh	449, 000	Fair	May 12, 1.30 p. m.

CENTRAL STATION, *May 19, 1890.*

In compliance with instructions received from headquarters, U. S. Fish Commission, I have this day forwarded by Messenger J. E. Brown, to Catletts, Va., for deposit in Broad Run, 485,000 shad fry, in fifteen cans.

RICHARD DANA,
Expert Fishculturist.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
May 19, 1890.

Report of shad fry distributed by J. E. Brown.

Date of receipt: May 19, 10.30 a. m.

Whence received: Central Station.

Number of shad fry: 485,000.

Date of departure from Baltimore and Potomac depot: 11.24 a. m., May 19.

Disposition of: Deposited in Cedar Run.

Date of deposit: 1.45 p. m., May 19.

Nearest railroad town to place of deposit: Catletts, Va.

Condition of fry when deposited: Good.

Loss of fry in transit: .03 per cent.

Date of arrival at Central Station on return: 7.45 p. m., May 19.

Remarks: Cedar Run at Catletts empties in the Occoquan, and that in the Potomac.

J. E. BROWN,
Messenger.

(Miles, 88.)

Deposits.

Stream.	Point of deposit.	No. planted.	Condition.	Date of deposit.
Cedar Run.....	Catletts, Va.....	471,000	Good	May 19, 1.45 p. m.

CENTRAL STATION, *April 27, 1890.*

In compliance with instructions received from headquarters U. S. Fish Commission, I have this day forwarded by Messenger M. Gleason, to Rapidan River, Virginia, 1,207,000 shad fry.

RICHARD DANA,
Expert Fishculturist.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
April 28, 1890.

Report of shad fry distributed by U. S. Fish Commission.

Date of receipt: April 27, 1890.

Whence received: Central Station, Washington, D. C.

Number of shad fry: 207 000.

Date of departure from Baltimore and Potomac depot: April 27, 1890.

Disposition of shad fry: Rapidan River, Virginia.

Date of deposit: April 27, 1890.

Nearest railroad town to place of deposit: Rapidan Station, Va.

Condition of fry when deposited:

Loss of in transit: none.

Date of arrival at Washington, D. C., on return: April 28, 1890.

Remarks: Loss so very small could not estimate.

MICHAEL GLEASON,
Messenger.

(Miles, 160.)

CENTRAL STATION, *April 26, 1890.*

In compliance with instructions received from headquarters U. S. Fish Commission, I have this day forwarded by J. E. Brown, messenger, to Quantico Creek, Virginia, 680,000 shad fry.

RICHARD DANA,
Expert Fishculturist.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
April 26, 1890.

Report of shad fry distributed by J. E. Brown.

Date of receipt: April 26, 1890, 4 o'clock p. m.

Whence received: Central Station, Washington, D. C.

Number of shad fry: 680,000.

Date of departure from Baltimore and Potomac depot: 4.55 p. m., April 26.

Disposition of shad fry: Deposited Quantico Creek, at Quantico.

Date of deposit: 7 15 p. m., April 26.

Nearest railroad town to place of deposit: R. F. and P.

Condition of fry when deposited: Excellent.

Loss of— in transit: —

Date of arrival at Central Station on return: 11.30 p. m., April 26.

Remarks: Fry deposited in good condition. Temperature water in cans 55°, in creek 56°; 70 miles railroad travel.

J. E. BROWN,
Messenger.

(Miles, 64.)

Deposits.

Stream.	Point of deposit.	No. planted.	Condition.	Date of deposit.
Quantico Creek.....	One-half mile north depot...	680,000	Excellent.	April 26, 1890, 7.15 p. m.

CENTRAL STATION, *April 28, 1890.*

In compliance with instructions received from headquarters U. S. Fish Commission, I have this day forwarded by Messenger J. E. Brown to Mattaponi River at Milford, Va., 854,000 shad fry.

RICHARD DANA,
Expert Fishculturist.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
April 28, 1890.

Report of shad fry distributed by J. E. Brown.

Date of receipt, April 28, 1890: 10.20 a. m.

Whence received: Central Station, Washington, D. C.

Number of shad fry: 854,000.

Date of departure from Baltimore and Potomac depot: 10.57 a. m., April 28, 1890.

Disposition of shad fry: Deposited in Mattopiny River, near Milford, Va.

Date of deposit: 2.25 p. m., April 28, 1890.

Nearest railroad town to place of deposit: Milford, Va.

Condition of fry when deposited: Good.

Loss of — in transit:

Date of arrival at Central Station on return: 11.10 p. m.

Remarks: Fish deposited in good condition; water in river high; temperature 57° temperature in cans, 58°.

One hundred and sixty miles railroad travel.

J. E. BROWN,
Messenger.

(Miles, 148.)

Deposits.

Stream.	Point of deposit.	No. planted.	Condition.	Date of deposit.
Mattapony River	Near Milford, Va	854,000	Good	April 28, 1890, 2.25 p. m.

CENTRAL STATION, *April 28, 1890.*

In compliance with instructions received from headquarters U. S. Fish Commission, I have this day forwarded by Messenger Frank Donnelly, to Little River at Taylorsville, Va., 956,000 shad fry.

RICHARD DANA,
Expert Fishculturist.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., April 30, 1890.

Report of shad fry distributed by F. L. Donnelly:
Date of receipt: April 28, 1890.
Whence received: Central Station.
Number of shad fry: 956,000.
Date of departure from: April 28, 1890.
Disposition of shad fry: Little River.
Date of deposit: April 28, 1890.
Nearest railroad town to place of deposit: Taylorsville.
Condition of shad when deposited: Good.
Loss of shad in transit: About 5 per cent.
Date of arrival at Washington on return: 11.30 a. m., April 29.
Remarks: Fish carried in 25 cans.

F. L. DONNELLY,
Messenger.

(Miles, 184).

CENTRAL STATION, April 29, 1890.

In compliance with instructions received from headquarters U. S. Fish Commission, I have this day forwarded by Messenger J. E. Brown, to Rivana River, at Charlottesville, Va., 500,000 shad fry.

RICHARD DANA,
Expert Fishculturist.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
April 29, 1890.

Report of shad fry distributed by J. E. Brown:
Date of receipt: April 29, 11 a. m.
Whence received: Central Station, Washington, D. C.
Number of shad fry: 500,000.
Date of departure from Baltimore and Potomac depot: 11.24 a. m., April 29, 1890.
Disposition of shad fry: Deposited in Rivana River, near Charlottesville, Va.
Date of deposit: 4.25 p. m., April 29, 1890.
Nearest railroad town to place of deposit: Charlottesville, Va.
Condition of fry when deposited: Good.
Loss of fry in transit: None.
Date of arrival at Central Station on return: 10.25 p. m., April 29, 1890.
Remarks: Temperature of water in cans, 58 degrees; water in river, 59 degrees.

J. E. BROWN,
Messenger.

(Miles, 226.)

Deposits.

Stream.	Point of deposit.	No. planted.	Condition.	Date of deposit.
Rivana River.....	Charlottesville, Va	500,000	Good	Apr. 29, 4.25 p.m.

CENTRAL STATION, May 1, 1890.

In compliance with instructions received from headquarters U. S. Fish Commission, I have this day forwarded by Messenger Frank Donnelly, to Mehering River, at Bel-field, Va., 967,000 shad fry.

RICHARD DANA,
Expert Fishculturist.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., May 5, 1890.

Report of shad fry distributed by F. L. Donnelly :
Date of receipt: May 1, 1890.
Whence received: Central Station, Washington, D. C.
Number of shad fry: 967,000.
Date of departure from May 1, 10.57 a. m.
Disposition of shad fry: Meherrin River.
Date of deposit: May 1, 1890, 6 p. m.
Nearest railroad town to place of deposit: Belfield, Va.
Condition of fry when deposited: Good.
Loss of fry in transit: About 5 per cent.
Date of arrival at Washington on return: May 2, 11.20 a. m.
Remarks: Transported in 25 cans.

F. L. DONNELLY,
Messenger.

(Miles 360.)

CENTRAL STATION, May 3, 1890.

In compliance with instructions received from headquarters U. S. Fish Commission, I have this day forwarded by F. L. Donnelly, messenger, to Wide Water, Virginia, 770,000 shad fry for deposit in Potomac River.
Number of cans, 25.

RICHARD DANA,
Expert Fishculturist.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, May 5, 1890.

Report of shad fry distributed by F. L. Donnelly :
Date of receipt: May 3, 1890.
Whence received: Central Station.
Number of shad fry: 770,000.
Date of departure from: May 3, 1890.
Disposition of shad fry: Potomac River.
Date of deposit: May 3, 8 p. m.
Nearest railroad town to place of deposit: Wide Water, Virginia.
Condition of fry when deposited: Good.
Loss of fry in transit: 50,000.
Date of arrival at Washington on return: 11.10 p. m.
Remarks: Transported in cans, 25.

F. L. DONNELLY,
Messenger.

(Miles, 64.)

CENTRAL STATION, May 3, 1890.

In compliance with instructions received from headquarters U. S. Fish Commission, I have this day forwarded by J. E. Brown, messenger, to Fredericksburgh, Va., for deposit in Rappahannock River, 750,000 shad fry in 20 cans, 1 can containing 500 salmon fry.

RICHARD DANA,
Expert Fishculturist.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
May 3, 1890.

Report of shad and salmon fry distributed by J. E. Brown:
Date of receipt: May 3, 10.30 a. m.
Whence received: Central Station, Washington, D. C.
Number of shad fry: 750,000.
Date of departure from B. & P. depot: May 3, 10.55 a. m.
Disposition of shad fry: Rappahannock River; salmon, Hazel Run.
Date of deposit: May 3, 2 p. m.
Nearest railroad town to place of deposit: Fredricksburgh.
Condition of fry when deposited: Good.
Loss of fry in deposit: 5 per cent.
Date of arrival at Central Station on return: 4 o'clock p. m., May 3.
Remarks: Deposited shad fry in Rappahannock River.

J. E. BROWN,
Messenger.

(Miles, 106.)

DEPOSITS.

Stream.	Point of deposit.	No. planted.	Condition.	Date of deposit.
Rappahannock River	Fredericksburgh, Va.....	Shad 713,000	Good	2 p. m. May 3, 1890

CENTRAL STATION, May 5, 1890.

In compliance with instructions received from headquarters U. S. Fish Commission, I have this day forwarded by Augustus Stewart, messenger, to Pasquotank River, North Carolina, at Elizabeth City, N. C., 630,000 shad fry in 20 cans.

RICHARD DANA,
Expert Fishculturist.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., May 7, 1890.

Report of shad distributed by C. A. Stewart:
Date of receipt: May 5.
Whence received: Central Station.
Number of shad fry: 630,000.
Date of departure from Washington, D. C.: May 5.
Disposition of shad fry: Pasquotank River, North Carolina.
Date of deposit: May 6.
Nearest railroad town to place of deposit: Elizabeth City, N. C.
Condition of shad when deposited: Fair.
Loss of shad in transit: 25 per cent.
Date of arrival at Washington, D. C., on return: May 7, 1890.

Messenger.

(Miles, 412.)

CENTRAL STATION, May 8, 1890.

In compliance with instructions received from headquarters U. S. Fish Commission, I have this day forwarded by car No. 3, J. F. Ellis in charge, to Montgomery, Ala., 1,950,000 shad eggs in eighteen jars and 1,000,000 shad fry in fifty cans.

RICHARD DANA,
Expert Fishculturist.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., May 13, 1890.

Report of shad and eggs fry distributed by car No. 3.

Date of receipt: May 8, 1890.

Whence received: Central Station.

Number of eggs: 1,590,000, fry, 1,000,000 = 2,590,000.

Date of departure from Central Station: May 8, 1890.

Disposition of eggs and fry: (See table).

Date of deposit: May 9 and May 10, 1890.

Nearest railroad town to place of deposit: Montgomery, West Point, Ala., Demopolis, and Flomaton, Ala.

Condition of fry when deposited: Fair.

Loss of eggs and fry in transit: 200,000.

Date of arrival at Central Station on return: May 13, 1890.

Remarks: (See below).

J. FRANK ELLIS,
Messenger in Charge of Car.

(Miles 1,648.)

Deposits.

Stream.	Point of deposit.	No. planted.	Condition.	Date of deposit.
Chattahoochee.....	West Point, Ga.....	300,000	Fair.....	May 9.
Escambia.....	Flomaton, Ala.....	400,000	do.....	May 9.
Tombigbee.....	Demopolis, Ala.....	400,000	do.....	May 9.
Alabama.....	Montgomery, Ala.....	800,000	do.....	May 9.
Alabama.....	Montgomery, Ala.....	490,000	do.....	May 10,
		2,390,000		
Loss.....		200,000		
		2,590,000		

On arrival at Montgomery on the evening of May 9, I ascertained that there was no train for Troy, Ala., until the next evening, so I saved eggs enough to make the trip. The next morning they cut off the water supply. After pumping it over a few times, found the eggs not looking well and hatching out weak fry, and in order to save them, placed them all in the river at Montgomery, so did not make trip to the Conecuh River at Troy, Ala. The 475 gold fish called for on instructions were not delivered by Central Station.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., May 13, 1890.

Report of shad fry distributed by R. S. Johnson.

Date of receipt: May 9, 1890.

Whence received: Car No. 3, at Montgomery, Ala.

Number of shad fry: 400,000.

Date of departure from Montgomery, Ala.: May 9, 1890.

Disposition of shad fry: Planted in Escambia River.

Date of deposit: May 9.

Nearest railroad town to place of deposit: Flomaton, Ala.

Condition of shad fry when deposited: Fair.

Loss of shad fry in transit: 5 per cent. = 20,000.

Date of arrival at Montgomery, Ala., on return: May 10, 1890.

R. S. JOHNSON,
Messenger.

(Miles, 238.)

Deposits.

Stream.	Point of deposit.	No. planted.	Condition.	Date of deposit.
Escambia River.....	Flomaton, Ala.....	400,000	Fair	May 9.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., May 13, 1890.

Report of shad fry distributed by Frank C. James.

Date of receipt: May 9, 1890.

Whence received: Car No. 3, at Montgomery, Ala.

Number of shad fry: 400,000.

Date of departure from Montgomery, Ala.: May 9, 1890.

Disposition of shad fry: Planted in Tombigbee River.

Date of deposit: May 10.

Nearest railroad town to place of deposit: Demopolis, Ala.

Condition of shad fry when deposited: Fair.

Loss of shad fry in transit: 5 per cent. = 20,000.

Date of arrival at Montgomery, Ala., on return: May 10, 1890.

FRANK C. JAMES,
Messenger.

(Miles, 250.)

Deposits.

Stream.	Point of deposit.	No. planted.	Condition.	Date of deposit.
Tombigbee River.....	Demopolis, Ala	400,000	Fair	May 10.

CENTRAL STATION, May 8, 1890.

In compliance with instructions received from headquarters U. S. Fish Commission, I have this day forwarded by Augustus Stewart, messenger, to Elizabeth City, N. C., for deposit in Pasquotank River, 600,000 shad fry, in twenty cans.

RICHARD DANA,
Expert Fishculturst.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., 1890.

Report of shad distributed by C. A. Steuart.

Date of receipt: May 8.

Whence received: Central Station.

Number of shad: 600,000.

Date of departure from Washington, D. C.: May 8.

Disposition of shad: Pasquotank River, N. C.

Date of deposit: May 9.

Nearest railroad town to place of deposit: Elizabeth City, N. C.

Condition of shad when deposited: Good.

Loss of shad in transit: 5 per cent.

Date of arrival at Washington, D. C., on return: May 11.

C. A. STEUART,
Messenger.

Deposits.

Stream.	Point of deposit.	No. planted.	Condition.	Date of deposit.
Pasquotank River.....	Elizabeth City, N. C.....	600,000	Good	May 9.

CENTRAL STATION, *May 8, 1890.*

In compliance with instructions received from headquarters U. S. Fish Commission, I have this day forwarded by J. E. Brown, messenger, to Relay House, Md., 572,000 shad fry, in twelve cans, for deposit in Patuxent River.

RICHARD DANA,
Expert Fishculturist.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
May 8, 1890.

Report of shad fry distributed by J. E. Brown:

Date of receipt: May 8, 3 p. m.

Whence received: Central Station.

Number of shad fry: 572,000.

Date of departure from Baltimore & Ohio depot: 3.25 p. m., May 8.

Disposition of: Deposited in Patapsco River.

Date of Deposit: 5.30 p. m., May 8.

Nearest railroad town to place of deposit: Relay Station.

Condition of fry when deposited: Good.

Loss of fry in transit: 5 per cent.

Date of arrival at Central Station on return: 9 p. m., May 8.

J. E. BROWN,
Messenger

(Miles, 62.)

Deposits.

Stream.	Point of deposit.	No. planted.	Condition.	Date of deposit.
Patapsco River.....	Relay Station.....	543,000	Good.	May 8, 5.30 p. m.

CENTRAL STATION, *May 9, 1890.*

In compliance with instructions received from headquarters U. S. Fish Commission, I have this day forwarded by J. E. Brown, messenger, to Occoquan Creek, Virginia, 533,000 shad fry, in sixteen cans.

Woodbridge, Va., nearest railroad station.

RICHARD DANA,
Expert Fishculturist.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
May 9, 1890.

Report of shad fry distributed by J. E. Brown:

Date of receipt: May 9, 4 p. m.

Whence received: Central Station.

Number of shad fry: 533,000.

Date of departure from Baltimore and Potomac depot: 4.55 p. m., May 9.

Disposition of: Deposited in Occoquan, at Woodbridge, Va.

Date of deposit: 7.20 p. m., May 9.

Nearest railroad town to place of deposit: Woodbridge.

Condition of fry when deposited: Good.

Loss of fry in transit: 5 per cent.

Date of arrival at Central Station on return: 11.30 p. m., May 9.

J. E. BROWN,
Messenger.

(Miles, 48.)

Deposits.

Stream.	Point of deposit.	No. planted.	Condition.	Date of Deposit.
Occoquan.....	Woodbridge, Va.....	506,000	Good	May 9, 7.20 p. m.

CENTRAL STATION, *May 10, 1890.*

In compliance with instructions received from headquarters, U. S. Fish Commission, I have this day forwarded by Messenger J. E. Brown 500,000 shad fry to Patapsco River at Relay House, Md. Shipment in fifteen cans.

RICHARD DANA,
Expert Fishculturst.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
May 10, 1890.

Report of shad fry distributed by J. E. Brown :
Date of receipt: 4 a. m., May 10.
Whence received: Central Station.
Number of: 500,000.
Date of departure from Baltimore and Ohio depot: 5 a. m.
Disposition of: Deposited in Patapsco River.
Date of deposit: 7 a. m., May 10, 1890.
Nearest railroad town to place of deposit: Relay Station, Md.
Condition of fry when deposited: Good.
Loss of fry in transit: None.
Date of arrival at Central Station on return: 9 a. m.

J. E. BROWN,
Messenger.

(Miles, 62.)

Deposits.

Stream.	Point of deposit.	No. planted.	Condition.	Date of deposit.
Patapsco River.....	Relay Station, Md.....	500,000	Good.....	May 10, 7 a. m.

CENTRAL STATION, *May 10, 1890.*

In compliance with instructions received from headquarters, U. S. Fish Commission, I have this day forwarded by Messenger J. E. Brown to Milford, Va., for deposit in the Mattaponi River 597,000 shad fry in nineteen cans.

RICHARD DANA,
Expert Fishculturst.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
May 10, 1890.

Report of shad fry distributed by J. E. Brown.
Date of receipt: May 10, 10 a. m.
Whence received: Central Station.
Number of shad fry: 597,000.
Date of departure from Baltimore and Potomac depot: 10.57 a. m., May 10.
Disposition of shad fry: Deposited in Mattaponi River.
Date of deposit: 2 p. m., May 10.
Nearest railroad town to place of deposit: Milford, Va.
Condition of shad fry when deposited: Good.
Loss of shad fry in transit: 8 per cent.

J. E. BROWN,
Messenger.

(Miles, 148.)

Deposits.

Stream.	Point of deposit.	No. planted.	Condition.	Date of deposit.
Mattapony.....	Milford, Va.....	549,000	Good	May 10, 2 p. m.

CENTRAL STATION, *Sunday, May 11, 1890.*

In compliance with instructions received from headquarters, U. S. Fish Commission, I have this day forwarded by Messenger Augustus Stewart, to Penolo, Va., 643,000 shad fry in twenty cans.

RICHARD DANA,
Expert Fishculturst.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
May 11, 1890.

Report of shad distributed by C. A. Stewart.

Date of receipt: May 11.

Whence received: Central Station.

Number of shad fry: 643,000.

Date of departure from Washington, D. C.: May 11.

Disposition of shad: Mattapony River.

Date of deposit: May 11.

Nearest railroad town to place of deposit: Penola.

Condition of shad fry when deposited: Good.

Loss of shad fry in transit: 5 per cent.

Date of arrival at Washington on return: May 11.

C. A. STEWART,
Messenger.

(Miles, 158.)

Deposits.

Stream.	Point of deposit.	No. planted.	Condition.	Date of deposit.
Mattapony River	Penola.....	643,000	Good	May 11.

CENTRAL STATION, *Sunday, May 11, 1890.*

In compliance with instructions received from headquarters, U. S. Fish Commission, I have this day forwarded by J. E. Brown, messenger, to Patapsco River, at Relay House, Md., 500,000 shad fry in sixteen cans.

RICHARD DANA,
Expert Fishculturst.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
May 11, 1890.

Report of shad fry distributed by J. E. Brown.

Date of receipt: 12 o'clock noon, May 11.

Whence received: Central Station.

Number of shad fry: 500,000.

Date of departure from Baltimore and Ohio depot: 1.15 p. m.

Disposition of shad fry: Deposited in Patapsco River.

Date of deposit: 2.45 p. m.

Nearest railroad town to place of deposit: Relay Station, Md.

Condition of shad fry when deposited: Good.

Loss of shad fry in transit: 5 per cent.

Date of arrival at Central Station on return: 6 p. m., May 11.

J. E. BROWN,
Messenger.

(Miles, 62.)

Deposits.

Stream.	Point of deposit.	No. planted.	Condition.	Date of deposit.
Patapsco River.....	Relay Station, Md.....	475,000	Good	May 11, 2.45 p. m.

CENTRAL STATION, May 14, 1890.

In compliance with instructions received from headquarters U. S. Fish Commission, I have this day forwarded by Augustus Steuart, messenger, to Satella River, at Folkston, Ga., 554,000 shad fry in fifteen cans.

RICHARD DANA,
Charge of Station.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
May 19, 1890.

Report of shad distributed by C. A. Steuart.

Date of receipt: May 14.

Whence received: Central Station.

Number of shad: 554,000.

Date of departure from Washington, D. C.: May 14.

Disposition of shad: Hurricane Creek.

Date of deposit: May 16.

Nearest railroad town to place of deposit: Blackshear, Ga.

Condition of shad when deposited: Good.

Loss of shad in transit: 30 per cent.

Date of arrival at Washington, D. C., on return: May 18.

Remarks: Shad designated for Satella River, Georgia, at Folkston, Ga., but owing to excursion party from Atlanta baggage-car packed and impossible to properly work fish. Owing to their weak condition, thought it best not to risk further travel and planted them in above-named creek, which empties into Satella a few miles below this point.

C. A. STEUART,
Messenger.

(Miles, 1,548.)

MAY 19, 1890.

Dear Mr. MOORE: After using all possible means (ice water, etc.) on fish for Satilla River I arrived at Atlanta, Ga., all right, but owing to excursion party from Atlanta, Ga., the baggage car was packed and could not work fish. Mr. Sturgis, traveling passenger agent, whose card I inclose, and others of the party not knowing of the condition of things asked, "Why not plant them at Blackshear, Ga. (this side of Folkston), as that stream (Hurricane Run) would do just as well." So, after leaving them, and seeing the weak condition of the fish on the morning of the 16th inst., thought it best not to risk further travel and planted them in this stream, which empties into Satilla River below.

Very respectfully, yours, etc.,

C. A. STEUART.

CENTRAL STATION, May 16, 1890.

In compliance with instructions received from headquarters U. S. Fish Commission, I have this day forwarded by Messenger J. E. Brown, to Milford, Va., 456,000 shad fry, in 15 cans, for deposit in Mattaponi River.

RICHARD DANA,
Charge of Station.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
May 16, 1890.

Report of shad fry distributed by J. E. Brown.
Date of receipt: May 16, 10 o'clock a. m.
Whence received: Central Station.
Number of shad: 456,000.
Date of departure from Baltimore and Potomac depot: 11 a. m., May 16.
Disposition of: Deposited in Mattaponi River.
Date of deposit: 2.45 p. m., May 16.
Nearest railroad town to place of deposit: Milford, Va.
Condition of fry when deposited: Excellent.
Loss of fry in transit: Very small.
Date of arrival at Central Station on return: 11.45 p. m., May 16.

J. E. BROWN,
Messenger.

(Miles, 148.)

Deposits.

Stream.	Point of deposit.	No. planted.	Condition.	Date of deposit.
Mattaponi River	Milford, Va.	456,000	Good	May 16, 2.45 p. m.

CENTRAL STATION, May 17, 1890.

In compliance with instructions received from headquarters U. S. Fish Commission, I have this day forwarded by Messenger Frank Donnelly, to Neuse River at Goldsborough, N. C., 396,000 shad fry, in 14 cans.

RICHARD DANA,
Expert Fishculturist.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., May 2, 1890.

Report of shad fry distributed by F. L. Donnelly.
Date of receipt: May 17, 1890.
Whence received: Central Station.
Number of shad fry: 396,000.
Date of departure from Baltimore and Potomac depot: May 17, 10.57 a. m.
Disposition of: Neuse River.
Date of deposit: May 17, 9.30 p. m.
Nearest railroad town to place of deposit: Goldsborough, N. C.
Condition of fry when deposited: Good.
Loss of fry in transit: 20,000.
Date of arrival at Washington, D. C., on return: May 18, 11.24 a. m.

F. L. DONNELLY,
Messenger.

(Miles, 554.)

CENTRAL STATION, May 21, 1890.

In compliance with instructions received from headquarters U. S. Fish Commission, I have this day forwarded by Messenger J. E. Brown to Clinton, N. C., 633,000 shad fry for deposit in Six Runs River.

Shipment in twenty cans.

RICHARD DANA,
Expert Fishculturist.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER'S REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
May 21, 1890.

Report of shad fry distributed by J. E. Brown.
Date of receipt: May 21, 4 a. m.
Whence received: Central Station.
Number of shad fry: 633,000.
Date of departure from Baltimore and Potomac depot:
Disposition of: Deposited in Six Runs River.
Date of deposit: May 21, 7.45 p. m.
Nearest railroad town to place of deposit: Clinton, N. C.
Condition of fry when deposited: Fair.
Loss of fry in transit: 20 per cent.
Date of arrival at Central Station on return: May 22, 11.45 p. m.
Remarks: This was a very weak lot of fish when received, and had been held at the station a good while. A large percentage of loss, but what were deposited were in good shape.

J. E. BROWN,
Messenger.

(Miles, 632.)

Deposits.

Stream.	Point of deposit.	No. planted.	Condition.	Date of deposit.
Six Runs River.....	Clinton, N. C.	497,000	Good.....	May 21, 7.45 p. m.

CENTRAL STATION, May 22, 1890.

In compliance with instructions received from headquarters U. S. Fish Commission, I have this day forwarded by Frank Donnelly, messenger, to Quantico Creek, Quantico, Va., 500,000 shad fry in fifteen cans.

RICHARD DANA,
Expert Fishculturst.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER'S REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., May 27, 1890.

Report of shad fry distributed by F. L. Donnelly,
Date of receipt: May 22, 1890, 4 p. m.
Whence received: Central Station.
Number of: 500,000.
Date of departure from: May 22, 4.50 p. m.
Disposition of: Quantico Creek, Va.
Date of deposit: May 22, 1890.
Nearest railroad town to place of deposit: Quantico, Va.
Condition of fry when deposited: Good.
Loss of fry in transit: None.
Date of arrival at Washington on return: May 22, 11 p. m.

F. L. DONNELLY,
Messenger.

(Miles, 64.)

CENTRAL STATION, April 30, 1890.

In compliance with instructions received from headquarters U. S. Fish Commission, I have this day forwarded by car No. 2, to Augusta, Ga., 1,244,000 shad eggs.

RICHARD DANA,
Expert Fishculturst.

U. S. FISH COMMISSION,
Washington, D. C.

MESSENGER'S REPORT.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., May 5, 1890.

Report of shad eggs and fry distributed by car No. 2.

Date of receipt. April 29 and 30.

Whence received: Havre de Grace Station, Maryland, and Central Station.

Number of eggs: Havre de Grace, 3,215,000; turned over to Central Station 2,136,000 in exchange for 3,293,000, making on car 4,372,000 eggs.

Date of departure from Perryville, Md.: 1.30 a. m. April 30.

Disposition of eggs and fry: Rivers in Georgia.

Date of deposit: May 1 and 2.

Nearest railroad town to place of deposit: Augusta and Macon, Ga.

Condition of fry when deposited: Very weak.

Loss of eggs and fry in transit: 1,703,000.

Date of arrival at Washington, D. C., on return: 2.30 a. m. May 5.

Remarks: The eggs I had on car were doing very well until I reached Augusta, Ga., then from some cause which I am unable to determine the eggs and fry produced from them commenced dying very rapidly.

W. A. DUNNINGTON,
Messenger in Charge Car No. 2.

(Miles, 1,554.)

Deposits.

Stream.	Point of deposit.	No. planted.	Condition.	Date of deposit.
Savannah River	Augusta, Ga.	1,000,000	Very weak	May 1, 1890.
Ocmulgee River	Macon, Ga.	1,500,000	do.....	May 2, 1890.
		2,500,000		

Number of eggs 4,203,000
Number of fry 2,500,000

Loss 1,703,000

Q. Have you read, in the past, a number of newspaper articles reflecting upon the management of the Commission and upon the conduct of the office?—A. I have.

Q. You have read those articles?—A. I have.

Q. If you have anything to say from your own knowledge touching the truth of the articles, or otherwise, you will please state it in your own way—A. There are so many false statements made that from memory I could not attempt to state them.

Q. Were any of the charges that were made true to your knowledge? You might remember that.—A. In the matter of salaries they may have gotten one or two of the salaries correct; but in reference to the general charges of favoritism, nepotism, undue administration, etc., I can say that I have seen no such thing in the Commission. I do not know of a single employé who has been appointed on account of favoritism by the Commissioner, and I would say further that most of the employés assigned to work in the office are assigned at my recommendation and are transferred from one office to another at my recommendation.

Q. Is it always for the good of the service?—A. Yes, sir, and in every case in the interest of the service.

Q. Do you know how many relatives of Colonel McDonald or his wife are in the employ of the Commission?—A. I do not think the Commissioner has a single relative in the Commission. I have understood that Mr. McCormick was a relative of Mrs. McDonald.

Q. And the Lewis's?—A. I have understood they were not even distantly related to Mrs. McDonald.

Q. Was Lewis employed by the Commission before McDonald became Commissioner?—A. Yes, sir.

Q. And McCormick was appointed by the present Commissioner?—A. Yes, sir.

Q. You are acquainted with Mr. McCormick?—A. Yes, sir; I know him very well.

Q. Is he a good and efficient clerk in the position he occupies?—A. I have always understood so from Mr. Rathbun, under whose immediate direction he is, and I can say further from what I have seen of his work that I consider him a most diligent, faithful, and efficient workman.

Q. Do you know Mr. Worth?—A. Yes, sir; I am very well acquainted with him.

Q. Did you have occasion to visit Fort Washington during the last season when he was there in charge?—A. Yes, sir; I visited Fort Washington once, I think, last season.

Q. Do you know whether or not Mr. Worth was in the habit of drinking excessively while he was there during last season?—A. I never heard of his drinking excessively except from one source, and when I heard it from that source I said it was a lie. I have known Mr. Worth for several years, and I know, at least I am reasonably certain, that if there was any excessive drinking going on at Fort Washington it would have been impossible to hide it, owing to the fact that either Colonel McDonald or some member of the Commission, or some person from Washington who had relationship with the Commission, went down there two, three, or four times a week. So that, if anything of that kind existed, it could not have been hidden.

Q. Do you consider Mr. Worth a good and efficient officer in the position he occupies?—A. I consider him one of the best qualified men generally that we have in the Commission. Of course you understand that we have very efficient officers in charge of specific work, but I speak now of general qualifications.

Q. State whether under Colonel McDonald old employes have been dropped and new employes appointed which worked disadvantage to the service?—A. I do not believe that Colonel McDonald has discharged a single employe who served under Professor Baird. There have been changes, there have been voluntary changes on the part of those who went out. I do not think he made a single discharge of an employe who served under Professor Baird.

Q. When occasion offered have you known of promotions being made on the score of merit where there were opportunities to make promotions on account of people going out? Has it been his custom to promote those who have served well to advanced positions?—A. Yes, sir; solely on account of merit and fitness for the position.

Q. Do you happen to know of any appointment which has been made by Colonel McDonald, which, in your opinion, was made on political grounds?—A. I do not know of a single appointment which has been made on political grounds. I do not know the politics of a dozen people in the Commission. It has never been considered a condition precedent to his appointment. It has never been considered necessary that a man should belong to one political party or the other. It was never considered so under Professor Baird's administration, and Mr. McDonald at the outset of his administration was very careful to say that he would not allow politics to have anything to do with the selection of appointees. I know further that requests have been made on the grounds of political pressure solely, and that in every case Colonel McDonald has resisted those requests. So far as I am concerned, I have never had any politics.

Q. It has been claimed that Commissioner McDonald, being a Democrat in politics, has favored employes who were Democrats. Do you think that is true?—A. I do not know of a single instance of that character. On the contrary I am reasonably positive that the three assistants next to him are Republicans.

If you are through with your questions, I would like to refer to one matter which was commented upon in a certain newspaper—I do not remember the name of it—in reference to the appropriation of money in lump for the conduct of the Fish Commission work, and I simply desire to say in reference to that, that Mr. McDonald submitted to the chairman of the Committee on Appropriations, Fiftieth Congress, first session a proposed classification of the employes, and in which he establishes, the grades and the salaries.

Q. And asks for an appropriation sufficient to cover it?—A. Yes, sir; and he asked further that it should be legalized, which was not done, however. I would like to say that we have, since that time, followed to a very great degree the classified or graded service as proposed by him. As it was not legalized, we did not consider that we had to follow it to the letter.

The classification is as follows :

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., April 9, 1888.

DEAR SIR: I respectfully transmit herewith revised "estimates of appropriations" for the U. S. Fish Commission for the fiscal year beginning July 1, 1888.

My predecessor in office, Prof. G. Brown Goode, was called upon to transmit the regular estimates shortly after he assumed direction of the affairs of the Commission and before determining upon the organization and definite direction of the work of the Commission.

It is necessary that these estimates should be corrected in important particulars in order that adequate provision may be made to carry on work at the new stations authorized by Congress and for the extension of the statistical and fisheries investigations to the South Atlantic, Gulf of Mexico, and West coasts. This will involve a moderate increase in the total estimates, the nature and necessity of which I will be glad to explain to the committee at their convenience.

Accompanying the estimates, and explanatory of the same, are schedules A, B, C, D, and E, giving the details upon which the several items of the estimates are based; also a memorandum explanatory of the increase in estimate over the appropriations for 1888.

Very respectfully,

M. McDONALD,
Commissioner.

Hon. S. J. RANDALL,
Chairman Committee on Appropriations, House of Representatives.

Memorandum to accompany revised estimates for 1888-'89, U. S. Commission of Fish and Fisheries.

The appropriations for 1887-'88 aggregate \$222,020, as follows:

Propagation of food-fishes.....	\$130, 000
Rent of offices	2, 020
Maintenance of fish-ponds, etc	45, 000
Maintenance of vessels.....	45, 000

The revised estimates for 1888-'89, herewith submitted, amount to \$249,080, as follows:

Salary of Commissioner.....	\$5, 000
Propagation of food-fishes.....	130, 000
Distribution of food-fishes.....	31, 180
Rent of offices	4, 000
Maintenance of vessels.....	43, 900
Inquiry respecting food-fishes.....	23, 000
Statistical inquiry	12, 000

The revised estimates being \$27,060 in excess of the appropriation for 1888.

The estimates for 1888-'89 provide for increased work in the propagation and distribution of shad, salmon, whitefish, trout, and other fish at all established stations, and for the maintenance and operation of the following additional stations, viz:

Gloucester station, Mass.....	\$3,000
Duluth station, Minn.....	4,800
McCloud River station, Cal., }	
Columbia River station, }	13,000

and for the following items not included in the previous estimates, viz:

Salary of Commissioner.....	5,000
Increased rent of offices.....	1,980
Total.....	27,780

They also provide for the extension of the work of the statistical and fisheries divisions to the investigation of the fisheries and fishing-grounds of the South Atlantic, Gulf of Mexico, and Pacific coasts.

U. S. COMMISSION OF FISH AND FISH FISHERIES—ESTIMATES OF APPROPRIATION 1888-'89.

Salary of Commissioner.....	\$5,000
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PROPAGATION OF FOOD-FISHES.

For the introduction by the U. S. Commission into and the increase in the waters of the United States of food-fishes and other useful products of the waters, including lobsters, oysters, and other shell-fishes, and for such general and miscellaneous expenditures as the Commissioner of Fish and Fisheries may find necessary in the prosecution of his work, including salaries or compensation of all necessary employes, \$130,000, as follows:

Administration.

Schedule A (salaries and general expenses).....	\$34,940
(a) Office of Commissioner.....	\$9,820
(b) Office of accounts.....	6,180
(c) Office of records and publications.....	6,440
(d) Property office.....	2,500
(e) Engineer office.....	2,700
(f) Office expenses.....	7,300

Division of fish-culture.

Schedule B.....	62,920
(g) Office force.....	3,620
(h) Propagation, general.....	7,800
(i) Propagation of shad.....	11,000
(k) Propagation of whitefish.....	10,000
(l) Propagation of marine species.....	12,000
(m) Propagation of salmon, Pacific coast.....	13,000
(n) Propagation of salmon, Atlantic coast.....	5,000
Schedule C.....	28,310
(o) Maintenance and operation of stations, as follows:	
Carp ponds, Washington, D. C.....	5,940
Central station, Washington, D. C.....	5,630
Wytheville station, Virginia.....	3,960
Northville station, Michigan.....	5,700
Duluth station, Minnesota.....	4,800
Cold Spring Harbor, Long Island.....	1,500
St. Jerome's station, Maryland.....	780
General and miscellaneous expenditures, such as the Commissioner of Fish and Fisheries may find necessary in the prosecution of the work.....	3,830

130,000

DISTRIBUTION OF FOOD-FISHES.

For the distribution of the eggs and young of the whitefish, salmon, shad, carp, cod, lobster, and other useful inhabitants of the waters, including salaries or compensation of all necessary employes, \$31,180, as follows:

Schedule D:

(p) Salaries.....	\$8,880
(q) Movement of cars, traveling expenses, etc.....	17,000
(r) Maintenance and repairs	3,500
(s) Express charges, freights, etc	1,800

NOTE.—This item has been heretofore provided for under the title "maintenance of fish ponds," for which the appropriation for the current fiscal year is \$45,000.

RENT OF OFFICES.

Rent of rooms for offices in the city of Washington	\$4,000
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MAINTENANCE OF VESSELS.

Maintenance of the vessels and steam-launches of the U. S. Fish Commission, and for boats, apparatus, machinery, and other facilities required for use with the same, including salaries or compensation of all necessary civilian employes	\$43,900
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NOTE.—This item includes the cost of one year's work of the steamer *Albatross* in the study and development of the fishery resources of the Pacific coast.

INQUIRY RESPECTING FOOD-FISHES.

For continuing the inquiry into the causes of the decrease of food-fishes in the lakes, rivers, and coast waters of the United States, and for the study of the waters of the interior in the interests of fish-culture; for the study of the methods and relations of the fisheries, with a view to their improvement; for the exploration of the fishing-grounds of the South Atlantic and Gulf coasts, with a view to the development of the commercial fisheries; and for the preparation of reports relating to the inquiry, including salaries or compensation and field expenses of scientific assistants, fishery experts, and other necessary employes, \$23,000, as follows:

Researches and investigations (Schedule E and note attached).....	\$15,000
Explorations of fishing grounds	8,000

STATISTICAL INQUIRY.

For the collection and compilation of the statistics of the fisheries of all portions of the United States, including persons employed, capital invested, and the quantity and value of the products, and for such general and miscellaneous expenditures as the Commissioner may find necessary in the prosecution of this work, including salaries or compensation of all necessary employes.....	\$12,000
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SCHEDULE A.—Administration, salaries, and general expenses.

	Salaries.	Other expenses.	Total.
<i>Office of Commissioner.</i>			
1 assistant in charge of inquiry	\$2, 400		} \$9, 820
1 field assistant, fisheries division.....	2, 400	.....	
1 chief clerk	2, 200	.....	
1 stenographer.....	1, 500	.....	
1 copyist.....	720	.....	
1 messenger, at \$50 per month.....	600	.....	
<i>Office of accounts.</i>			
1 disbursing agent	2, 200		} 6, 180
1 examiner of accounts.....	1, 400	.....	
1 clerk (accountant).....	1, 200	.....	
1 clerk	720	.....	
1 type-writer.....	660	.....	
<i>Office of records and publications.</i>			
1 chief clerk.....	2, 000		} 6, 440
1 clerk	1, 400	.....	
1 clerk	1, 000	.....	
2 clerks, at \$840	1, 680	.....	
1 messenger, at \$360.....	300	.....	

SCHEDULE A.—Administration, salaries, and general expenses—Continued.

	Salaries.	Other expenses.	Total.
<i>Office of property.</i>			
1 inspector of stations.....	\$1, 500	.....	} \$2, 500
1 clerk	1, 000	.....	
<i>Engineer office.</i>			
1 engineer and draughtsman	1, 800	.....	} 2, 700
1 draughtsman	900	.....	
<i>Office expenses.</i>			
Furniture, fuel, light, repairs, temporary services, and necessary traveling expenses of Commissioner, inspector of stations, and other employés of the office detached for special field service. ....	.....	\$4, 000	} 7, 300
Stationery blanks, printing circulars, pamphlets, extras, etc., translations, preparation of illustrations for report, and the general miscellaneous expenses of office .....	.....	2, 700	
Janitor of offices	600	.....	
	28, 240	6, 700	34, 940

SCHEDULE B.—Division of fish-culture.

	Salaries.	Other expenses.	Total.
<i>Office force.</i>			
1 clerk and stenographer	\$1, 200	.....	} \$3, 620
1 record clerk.....	1, 000	.....	
1 clerk and type-writer.....	1, 000	.....	
1 messenger.....	420	.....	
<i>Propagation, general.</i>			
2 field superintendents, at \$1,500	3, 000	.....	} 7, 800
4 fish-cultural experts, at \$900	3, 600	.....	
2 fish-cultural experts, at \$600.....	1, 200	.....	
And the field superintendents and fish-cultural experts provided for above shall be available for assignment to duty at field or permanent stations or in the collection of statistics, as the exigencies of the work require.			
<i>Propagation of shad.</i>			
Propagation of shad, river herring, striped bass, and other important food-fishes which are anadromous in habit, for distribution to interior and coast waters, including the maintenance and operation of Battery Station, Susquehanna River, Fort Washington Station, Potomac River, and the construction, equipment, and operation of such field stations as may be required for the satisfactory conduct of the work		\$11, 000	11, 000
<i>Propagation of whitefish, etc.</i>			
Propagation of whitefish, lake-trout, pickerel, grayling, etc., including maintenance and operation of the station at Alpena, Mich., and such field stations as may be required for the more convenient prosecution of the work.....		10, 000	10, 000
<i>Propagation of marine species.</i>			
Propagation of cod, halibut, mackerel, lobster, and other useful inhabitants of salt-water, including maintenance and operation of the stations at Wood's Holl, Mass., and at Ten Pound Island, Gloucester, Mass		12, 000	12, 000
<i>Propagation of salmon on the Pacific coast.</i>			
For stocking West coast rivers, including the maintenance and operation of the McCloud River Station, California, the Columbia River Station, Oregon, and the construction, maintenance, and operation of such field stations as it may be desirable to establish in the interest of the work		13, 000	13, 000
<i>Propagation of the Atlantic salmon.</i>			
Propagation of landlocked or schoodie salmon, including the maintenance and operation of the stations at Grand Lake Stream, Me., Bucksport, Me, and Craig's Creek, Me		5, 500	5, 500
			62, 920

SCHEDULE C.—*Division of fish-culture—Maintenance and operation of stations.*

[NOTE.—The title "Maintenance and operation of stations," wherever used, includes all expenditures on account of work at said station, viz, salaries of employes permanently attached to station compensation of temporary employes, maintenance and repair of buildings, ponds, inclosures, grounds, etc., renewal, maintenance, and repair of equipment, apparatus, tools, and machinery, and such general and contingent expenditures as are necessary for the conduct of the station; but does not include the salaries of field superintendents and fish-cultural experts who may be temporarily assigned to the work of the station.]

	Salaries.	Other expenses.	Total.
<i>Carp-ponds, Washington, D. C.</i>			
1 superintendent pond-culture	\$1,500		} \$5,940
1 foreman	900	.....	
2 night watchmen, at \$540	1,080	.....	
2 laborers, at \$480	960	.....	
Compensation temporary employes, maintenance and repairs, general and contingent expenses		\$1,500	}
<i>Central Station, Washington, D. C.</i>			
1 superintendent of station	1,500		} 5,630
1 assistant in fish-culture	1,200	.....	
1 night watchman	600	.....	
2 laborers, at \$540	1,080	.....	
Compensation temporary employes, etc.		1,250	
<i>Wytheville Station, Virginia.</i>			
1 superintendent	1,200		} 3,960
1 assistant (foreman)	480	.....	
1 night watchman	420	.....	
1 laborer	360	.....	
Compensation temporary employes, etc.		1,500	
<i>Northville Station, Michigan.</i>			
1 superintendent	1,800		} 5,700
1 foreman	900	.....	
1 assistant	720	.....	
1 night watchman	480	.....	
Compensation temporary employes, etc.		1,800	
<i>Duluth Station, Minnesota.</i>			
1 superintendent of station	1,500		} 4,800
1 assistant	720	.....	
2 laborers, at \$540	1,080	.....	
General miscellaneous and contingent expenses		1,500	
<i>Cold Spring Harbor Station, Long Island.</i>			
Temporary service, miscellaneous and contingent expenses		1,500	1,500
NOTE.—This station is the property of the New York State fish commission. The U. S. Commission bears a proportion of the expenses of operation in consideration of work done on account of U. S. Commission. This expenditure averages \$1,500 per annum.			
<i>St. Jerome's Station, Maryland.</i>			
1 watchman	480		} 780
Rent		100	
Miscellaneous and contingent expenses		200	
And the amount appropriated for the maintenance and operation of this station, or so much of it as may be necessary, may, at the discretion of the Commissioner, be applied to the expense of removal of the property of the Commission, should this station be abandoned.			
			28,310

SCHEDULE D.—*Division of fish-culture.*

	Salaries.	Other expenses.	Total	
<i>Distribution.</i>				
For the distribution of shad, whitefish, carp, salmon, trout, bass, cod, lobsters, and other useful inhabitants of the water to the ponds, lakes, rivers, and coast waters of the United States, as follows:				
Salaries :				
1 superintendent of distribution.....	\$1,500	.....	} \$8,880	
1 clerk.....	1,200	.....		
2 messengers (car captains), at \$1,200	2,400	.....		
3 messenger assistants, at \$900.....	2,700	.....		
2 messenger apprentices, at \$540.....	1,080	.....		
Movement of cars engaged in distribution :				
Compensation of temporary employes and for traveling expenses of superintendent, messengers, and other employes engaged in the distribution of fish and eggs, or on other duty pertaining to the work of the Commission.....	.....	\$17,000	} 22,300	
Maintenance and repair of cars:				
Renewal, maintenance, and repair of equipment, machinery, and apparatus employed in distribution, and for packing boxes, crates, buckets, cans, etc., for shipment of fish and eggs .....	.....	3,500		
Express charges, freights:				
Drayage, telegrams, and other miscellaneous and contingent expenses not specified above, but necessary for efficient conduct of the work .....	.....	1,800		
Total estimates for distribution .....	.....	.....	31,180	

SCHEDULE E.—*Inquiry respecting food-fishes—Researches and investigations.*

Salaries:			
Ichthyologist	\$2,100	} \$3,700	
Clerk	1,200		
Messenger	400		
Compensation of experts, employed in special researches.....			5,000
Traveling expenses, and subsistence of field parties.....			3,000
Collecting appliances, instruments, preservatives, etc.....			2,400
Contingent expenses.....			900
Total			15,000

INQUIRY RESPECTING FOOD-FISHES.

[Memorandum.]

This inquiry relates both to the general fisheries and to fish-culture, and comprises:

(1) The prosecution of researches respecting the causes of the decrease of food-fishes, as directed by the law establishing the Commission.

(2) The exploration of the ocean, lake, and river fishing-grounds, with respect to their location, area, and resources, and the mapping and describing of the same for the information of the fishermen.

(3) The investigation of the temperature and density of the water on the fishing grounds, and of the spawning and feeding habits of fishes, as influencing their migrations and varying abundance from year to year.

(4) The study of the life history of important economic fishes, and of the conditions of their environment, as a preliminary to their propagation and transplantation to new waters.

(5) The study of methods of fish preservation, with special reference to the bait supply, etc.

(The above items have been regularly provided for in previous appropriation bills, but have not been separately stated.)

The Commissioner recommends, and begs to request the sanction by Congress of, the policy pursued by the late Commissioner in extending the facilities of the Wood's Holl Station to scientific investigators and representatives of educational establishments, from whom much substantial assistance has been obtained by the Commission. The buildings contain ample space for their accommodation without interfering with the legitimate work of the Commission, and their presence does not materially increase the cost of maintaining the station. A large amount of valuable material, resulting from the explorations of the steamers of the Commission, is brought into the station, especially during the summer, thus affording opportunities for scientific research which do not exist elsewhere in the United States. Similar stations are maintained by nearly all the maritime nations of Europe and by Japan.

The WITNESS. Further, I would also add that our service is now practically graded; at least, it is so nearly graded that it could be done without any trouble whatever, in my opinion. That is, we have first, second, and third class station superintendents. We have car service captains at an established grade. We have messengers, assistant messengers, and apprentice messengers, and as far as practicable we have our clerical force on a graded service.

Q. It has been claimed in some of those newspaper articles that the business, that is, the monetary affairs of the Commission were run in a loose way; that the purchase of necessary supplies, stationery, and all the various articles required by the Commission were bought in a haphazard way and paid for in a loose kind of way. Have you any knowledge as to the system of purchasing of and payment for supplies?—A. All supplies of the Commission are purchased on an approved requisition. That is, if any one in the office desires a supply of stationery, a chair, or anything else pertaining to the office, he makes out a requisition for it, and it is submitted to me. By the authority of the Commissioner I approve that requisition, if it comes under what would be considered as necessary and essential for the office. If there is an amount of money involved, that requisition goes to the disbursing agent first, and he certifies as to whether it is in accordance with law, as to whether we have the means wherewith to pay when the expense is incurred. Then it is returned to my office. If I consider that there is anything unusual, I take it to the Commissioner; so that there is no possibility for looseness in the way of purchasing or paying for purchases by the Commission, nor in the use of stationery.

Q. So that as to purchases outside of the daily needs of the office anything at all unusual you submit the requisition to the Commissioner?—A. Yes, sir; no one has authority to incur a single dollar of expense until he has that approved requisition, unless it would be in the case of probable destruction of public property. Then, of course, he would be authorized without this approved requisition to save that property and to incur a reasonable expense in doing so. But he is required at once to submit what we call an emergency requisition to cover that.

Q. Say a requisition is granted and the purchase is made; is there somebody who knows that that property, whatever it may be, is delivered, and is it checked off? Is there a regular system in regard to that?—

A. Yes, sir. Say the superintendent of the station at Northville, Mich., should make a purchase of property of any character—cans or anything else; the bill is made out by the person from whom he makes the purchase. He sends that bill certified to the disbursing agent that it is correct. You understand, of course, that there is a requisition already on file in the hands of the disbursing officer before this expenditure is incurred, and after he makes it—

Q. The superintendent in charge certifies to the delivery of the property?—A. Yes, sir; and sends the bill to the disbursing agent. If there is any inconsistency between that bill and the requisition the bill is not paid until it is explained. Then in addition to that and as a further means of security and establishing an accountability for that property the superintendent of the station who acquires the property forwards to the property clerk of the Commission a property receipt wherein he is charged with and accountable for that property until he is relieved by the Commission.

Q. And if the bill is in accordance with the requisition, then the bill is paid?—A. Yes, sir; by the disbursing agent.

TESTIMONY OF CHARLES W. SCUDDER—Recalled.

CHARLES W. SCUDDER, being recalled, testified as follows:

By the CHAIRMAN:

Q. You have already testified before the committee?—A. Yes, sir.

Q. What is your present position in the Fish Commission?—A. Record clerk; I have charge of all the manuscript and letters of the Commission.

Q. Were you ever connected with the record work under Mr. C. W. Smiley?—A. Yes, sir.

Q. Are you familiar with the routine through which the letters, etc., pass in being registered under the direction of Mr. Smiley?—A. Yes, sir; the letters were first opened in the chief clerk's office, then went by messenger to Mr. Smiley's office and left on his desk generally until Mr. Smiley came in. After that they were given to another clerk to register—given to another clerk, rather, to make on the top a synopsis of them; then they were registered by still another clerk. After registration they were passed back through the same channel to Mr. Smiley's desk, and if he were there they were turned over to the Commissioner. If he were not there they were held for his return. Sometimes the letters would get to the Commissioner's office as late as 12 or 1 o'clock.

Q. Letters received in the morning?—A. Yes, sir.

Q. About how many letters were daily registered during the period that Mr. Smiley had charge under Colonel McDonald's administration?—A. About fifty a day, I should think.

Q. About how long does it now take to register the letters and have them sent to the Commissioner's desk?—A. They are all returned to the Commissioner by 10 o'clock in the morning. The important letters are on the Commissioner's desk by half past nine.

Q. Why are they placed before the Commissioner earlier now than under Mr. Smiley's administration?—A. Under Mr. Smiley's registration they were held for his arrival, and they also went through this routine of three or four clerks registering. Now I open the letters in the morning, generally about a quarter to 9, and give them to a clerk to register. Then they are passed right into the Commissioner's office without going through so many hands.

Q. Is the present system as orderly and systematic as the former system?—A. Yes, sir; it is a very similar system to that under Mr. Smiley, with a few minor changes and alterations.

Q. Which result in the saving of time?—A. Yes, sir.

Q. You say that Mr. Smiley was not in when the letters were registered and came back to his office—was he not in usually by 9 o'clock?—A. No, sir; he was seldom there before 10, and it was sometimes 11 o'clock before he came.

Q. Was he detained by fishery business?—A. I think not. I do not know of any fishery business that would detain him.

Q. Do you consider that the efficiency of the service has been greatly increased by the transfer of the records from Mr. Smiley's office?—A. I think it has been materially increased, because while under Mr. Smiley's direction the registration of the mail was materially delayed and the letters often called for were not found by him in his office, thus interfering with the work of the Commissioner's office. That is, if a special letter was asked for from Mr. Smiley's office, although it may have been there, he would not always furnish it.

Q. Why?—A. He would report that it was not there.

Q. I understand what you mean?—A. I think it was through careless search that it was not found. I have one letter particularly in mind of Bergen Museum, Germany, and that was asked for, but Mr. Smiley said he had no copy of any such letter, which necessitated the writing to Germany of two letters.

Q. Were not complaints frequent during the last year of Mr. Smiley's administration of the Commission as to the manner in which he conducted the work of his office?—A. Yes, sir; there was great delay in getting stationery and letters from his office.

Q. Have you seen circular order No. 19 in reference to the hours of duty which the clerks and other employés in the office are required to observe?—A. Yes, sir.

Q. When did you first see it?—A. In the summer of 1888, soon after it was issued; I saw it in Mr. Smiley's office.

Q. Did you understand this order was to be strictly enforced, and did you yourself comply with its requirements?—A. Yes, sir; I understood it was to be enforced and I complied with it as far as I possibly could.

Q. Did Mr. Smiley, from your observation, comply with the provisions of this order?—A. No, sir; he was not there at 9 o'clock, and would leave at various times for private business.

Q. Have you any knowledge as to whether his coming late, 10 or 11 o'clock, and leaving early was because he did official work at his home, or was it for his own private convenience?—A. I have no knowledge on the subject only from what I have heard, that he went home and did private work in the afternoons, and that mornings he would not get his breakfast until half-past 9. Consequently he would not be doing Fish Commission work.

Q. During that time did he not act as editor?—A. I am speaking of the time after the editorial work was transferred.

Q. So that you know of no official business which kept him from the office?—A. No, sir.

Q. Is it the understanding that all circular orders issued by the Commissioner are to be strictly complied with?—A. I think so.

Q. Did he confine himself strictly to Fish Commission work after office hours?—A. No, sir; I have known him to do private work.

Q. Of what character?—A. I think he edited a microscopical journal; he did some of that work, and not only did not confine himself to Fish Commission work, but he would engage in the discussion of topics foreign to Fish Commission work.

Q. With whom?—A. With employés, and thus interfered with the work of other employés by loud talking. I have known him to engage in such discussions for two hours at a time.

Q. Would he frequently do that?—A. Yes, sir; quite frequently.

TESTIMONY OF ALBERT J. STOERZER.

ALBERT J. STOERZER, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Are you in the employment of the Fish Commission?—A. Yes, sir.

Q. When did you first enter the service?—A. In February, 1885.

Q. What was the nature of your work at that time?—A. I was appointed as a messenger.

Q. In which office?—A. When I was first appointed I worked for Mr. Gill, the disbursing agent.

Q. Were you afterwards transferred to Mr. Smiley's office?—A. Yes, sir; in the summer of 1885. The others were away, and I was put under Mr. Smiley, and then I continued under Mr. Smiley.

Q. What are your duties at present?—A. I am rated as a clerk, and issue the stationery and distribute the publications under the direction of the chief clerk.

Q. Are you more fully occupied now than you were under Mr. Smiley's administration?—A. I am well occupied now. While I was under Mr. Smiley I was still rated as a messenger, although I did clerical work almost all the time I was under him.

Q. You have now more responsible duties?—A. Yes, sir; I was appointed as a clerk from the beginning of last September.

Q. Under whose direction are you now engaged?—A. Under direction of the chief clerk.

Q. Have you seen circular order No. 19 in reference to the performance of duties by employes engaged on clerical and other work of the Fish Commission?—A. Yes, sir.

Q. With regard to attendance, etc.?—A. Yes, sir.

Q. From your observation do the employes of the office comply with the requirements of the order, that is, are they there at 9, and do they remain until 4 o'clock?—A. Yes, sir; as far as I know.

Q. Do you think they comply pretty fully with that order as a rule?—A. Yes, sir; so far as I know.

Q. What time do you generally reach the Fish Commission office?—A. I am there by 9 o'clock, and I have made it a practice always to be there before 9. My usual time, however, is from a quarter to ten minutes of 9.

Q. What time did Mr. Smiley usually reach the office when he was connected with the Fish Commission?—A. When the office was up at the Safe Deposit building it was usually about 10 o'clock, and last summer, I guess during August, it used to be 11 o'clock, although it was not always 11 o'clock. From half-past 10 until 11 and sometimes after that.

Q. At what time was he in the habit of leaving the office?—A. He usually left at 4 o'clock, I think, but in the afternoons sometimes he would go out at 12 or after 12 and stay out for an hour or two and then come back and stay until 4 o'clock.

Q. So that he did not comply very fully with order No. 19?—A. No, sir.

Q. You think he did not comply with the order to come at 9, but would come late and go out for an hour or so and come back and stay until 4 o'clock?—A. Yes, sir.

Q. About how many hours a day did Mr. Smiley serve in the office when you were there?—A. From three to three and a half hours I should say.

Q. Was not the registering and returning of the letters and circulars materially delayed by the tardiness of Mr. Smiley?—A. Yes, sir; because the mail was brought in and laid on his desk until he saw it before it was registered, and in 1889, I think, several times the Commissioner sent for the mail before it had been registered, and so at last—although I never heard him give an order—Mr. Latimer used to register the mail and leave it on Mr. Smiley's desk. When it was sent for it was sent to the Commissioner; otherwise it remained on his desk.

Q. Unless it was sent for it laid on his desk?—A. Yes sir.

Q. About what time on an average would the morning's mail be inspected by Mr. Smiley and sent over to the Commissioner?—A. I do not remember exactly, but I think from 11 to half-past 11; between that time, I think.

Q. Have you heard any expressions of dissatisfaction at the manner in which Mr. Smiley discharged the duties of his office, especially during the last year of his connection with the Fish Commission?—A. The general expression all round among the clerks of the office about his management of affairs, and one instance I specially remember was last summer while Mr. Rathbun was acting Commissioner, he wanted a certain book in the library, and I inquired of it from Mr. Smiley; Mr. Rathbun wanted to know whether they had more than one copy of it, and I think Mr. Smiley gave some answer; said he did not know, or something like that. Mr. Rathbun wanted to know if he did not know what he had in the library.

Q. What was the general opinion among you clerks there as to Mr. Smiley's promptness and good administration of his office?—A. It was not very favorable; it was not favorable.

Q. Do you think the affairs of that office are better managed now than they were while Mr. Smiley was there?—A. Yes, sir; I think so.

Q. You do?—A. Yes, sir.

TESTIMONY OF HARRY P. PARKER.

HARRY P. PARKER, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. Are you in the employment of the U. S. Fish Commission?—A. Yes, sir.

Q. How long have you been in the service?—A. Since March, 1884.

Q. Under whom have you served?—A. Under Professor Baird and Colonel McDonald.

Q. And Mr. Goode?—A. Yes, sir.

Q. Do you work in the office which was under the charge of Mr. Smiley?—A. Yes, sir.

Q. What was the nature of your work under Mr. Smiley?—A. In his office it was type-writing, stenography, and clerical work.

Q. What are your duties at present?—A. Stenography, type-writing, and clerical work.

Q. Did Mr. Smiley keep you fully employed at work?—A. The last part of his time he did not.

Q. For how long a period were you sometimes without work when you were under Mr. Smiley's direction?—A. As near as I can remember sometimes two or three hours.

Q. How has this been when you have worked for others in the Commission?—A. It has not been true in regard to others.

Q. In what other offices or divisions have you been engaged?—A. In the division of fisheries, and a short while for the chief clerk, and I was also employed for a while with Col. John Gay, inspector of stations.

Q. At what time did Mr. Smiley generally arrive at the office?—A. I think generally you might say about 10 o'clock; somewhere in the neighborhood of 10 o'clock, although I was in another room. The only way I know that is, I used to go to him some mornings before 10 o'clock for work and he would not be there, and I inquired if he was and the messenger would say he was not in.

Q. Usually about 10 o'clock he would get in?—A. Yes, sir.

Q. About how many hours did he generally remain in the office each day?—A. As well as I could know, I think he staid there not over four; less, but not over four.

Q. He went away before 4 o'clock usually?—A. Yes, sir.

Q. Have you seen a copy of circular order No. 19 in reference to the hours which clerks and other employés in the office are required to devote to public business?—A. Yes, sir.

Q. When and where did you first see it?—A. I saw it about in the summer of 1888, after it was issued.

Q. After Colonel McDonald came in?—A. Yes, sir.

Q. What have you to say in reference to the charge of laxity of discipline generally among employés at the office? It has been stated that you did about as you pleased; came and went away when you pleased.—A. It is not true.

Q. You think, as a rule, the clerks are there promptly at 9 o'clock?—A. Yes, sir.

Q. And they stay until 4?—A. Yes, sir.

Q. They do not leave without special permission?—A. No, sir; no one can do that. They must have permission. That is true of every clerk.

Q. Have you frequently heard expressions of dissatisfaction at the manner in which Mr. Smiley conducted his office, especially during the last year of his connection with the Fish Commission?—A. I have heard the clerks in the division complain of his treatment and policy, but I never heard any one outside of my division complain. I know there was dissatisfaction; at least, I understand there was dissatisfaction.

Q. You say clerks in the division complained; what was the ground of their complaint?—A. In some cases they were made to do the work of other clerks. I myself sometimes would have to do other work. Mr. Smiley told one of the clerks, Mr. Latimer, that he might order me to do his work, I understood that; I did not hear it.

Q. Did you, as a matter of fact, do Mr. Latimer's work?—A. Yes, sir.

Q. What was he doing in the mean time?—A. I do not know what he did. On one occasion he went home; one Christmas eve, 1888, I think it was; I am not sure of the date. Mr. Latimer used to register letters, and on Christmas eve the office closed at 12 o'clock and he left the letters for me to register. I know he went home. There was an order issued by Mr. Smiley putting me under Mr. Latimer's jurisdiction. I was to report to him to be excused from duty, and report to him for work, and other things. Mr. Smiley asked me if I had any objection to it, and he told me the reason he did it was to push Mr. Latimer up. That is the reason he gave me; that it was to push Mr. Latimer and forward him.

Q. What office are you employed in now?—A. I am at the preent time in the division of fisheries.

Q. Has your compensation been increased since you first entered the service?—A. Yes, sir; several times.

Q. What pay did you get when you first went in?—A. Twenty-five dollars a month. The first increase was to \$30; the next increase was under Mr. Goode, to \$55; and the last, I think, about soon after Colonel McDonald was made Commissioner, during his administration, to \$70. I have had none since then.

Q. At the time of that last increase were your duties changed and increased; had you more to do?—A. Yes, sir.

Q. Why did they pay you more?—A. I had more to do. I did short-hand work from the first day I went in, and then I had clerical work. I was copyist first, and put up to clerk, but I did the short-hand all along.

Q. Each time your pay has been increased it has been because you have been called on to do more work?—A. I was recommended each time. As to Mr. Smiley going away before 4 o'clock, he would go away sometimes during the middle of the day and come back about half an hour before 4, and then stay until 4.

Q. He was not there steadily?—A. No, sir.

Q. And did not comply with order No. 19?—A. No, sir. I mean to say, his attendance was irregular. He was not absent any particular time so much, but he would be in the office an hour and go away and stay two hours.

TESTIMONY OF MARSHALL McDONALD—Recalled.

MARSHALL McDONALD, being recalled, testified as follows:

The WITNESS. I desire to make a brief explanation with respect to a statement which occurs in the list of scientific collaborators of the Commission (page 505), and which, as it now stands, might do injustice to one who has been a valued co-worker of the Commission for many years. I refer to Prof. W. O. Atwater, of Wesleyan University, Middletown, Conn., who is also now director of the office of Experiment Stations in the Department of Agriculture. The monographic report upon the chemical composition and nutritive value of economic fishes, cited in connection with his name in the place indicated, is based upon researches made in the chemical laboratory of Wesleyan University, beginning some time prior to 1880. These researches were carried on by Professor Atwater and several assistants, the expenses incidental to the same being partly paid by the Fish Commission and partly by private individuals interested in the promotion of scientific investigations at Wesleyan University.

It is estimated that not over one-half of the cost of the work was defrayed by the Commission, which has received all of its benefits. Preliminary accounts of the results obtained have been printed in the Fish Commission reports.

The completion of the monograph required some additional investigations and revisions, as well as the purchase of materials, during the years 1888 and 1889, the work being performed by the assistants in the chemical laboratory at Middletown, Conn., under Prof. Atwater's direction. No part of the expenditure of \$1,000, however, was for services by Professor Atwater, but it covered simply the pay of assistants engaged upon the work, cost of apparatus, reagents, etc. Prof. Atwater has received no compensation from the Fish Commission since he entered the Department of Agriculture.

By the CHAIRMAN:

Q. Will you inform the committee as to the manner of approving accounts for expenditures? Are accounts for expenditures ever paid by the disbursing officer of the Commission without the autograph signature of the Commissioner approving the same?—A. Never in a single instance. The autograph stamp is only used for requisitions asking authority to incur expenditures which are already authorized under

general regulations or covered by instructions issued by the Commissioner from time to time. In further explanation of this matter I submit letters of explanation from the chief clerk and the disbursing officer of the Commission, as follows:

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., August 1, 1890.

SIR: In answer to your letter of July 31, 1890, to inform you whether, in any single instance, vouchers have been paid upon a stamped impression of your signature. I beg to state emphatically that such has never been done, but that each and every voucher, both the original and duplicate copies, bears your autographic signature.

Very respectfully,

HERBERT A. GILL,
Disbursing Agent.

I concur in the above statement made by Mr. Gill.

A. C. ADDISON,
Examiner of Accounts.

Hon. MARSHALL McDONALD,
U. S. Commissioner of Fish and Fisheries.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., August 1, 1890.

SIR: In reply to your letter of July 31, requesting to be informed whether in any instance vouchers have been passed to audit, upon a stamped signature, I beg to say that in not a single case has this been done; every voucher involving the expenditure of money bearing the sign-manual of the Commissioner.

In this connection I beg to state that the autograph stamp is used for the approval of only such requisitions for stationery, labor, and supplies as are required for the conduct of the regular routine work of the Commission. Every requisition of an unusual character, or which does not come under such routine, or where the same is not covered by a specific assignment of funds, is referred to the Commissioner, by whom it is either approved in person or by whose direction at the time the autograph stamp of approval is affixed.

It may be interesting to note the condition under which stationery was issued during the administration of Professor Baird, when chiefs of division were authorized to make requisitions for such stationery, blanks, etc., as they needed, the approval of the Commissioner not being required in such case. It will be seen from the instructions in reference to this matter that the chief of the division of records and publications was allowed no discretion whatever as to the propriety of filling requisitions for stationery submitted by chiefs of division. The paragraph is as follows:

"The keeping, recording, and distribution of all stationery, blanks, circulars, etc., of the Commission: Chiefs of division will make requisition upon him for such blanks, stationery, etc., as they need, and he is not required to consider, in any respect, the propriety of such requisitions, but to furnish the same so far as consistent with all the demands upon the stock. The chief signing the requisition will be held responsible to the Commissioner both for the wisdom of the requisition and the use of the supplies. If a chief of division make requisition for supplies not in stock, he shall refer the requisition to the Commissioner, and so notify the person making requisition."—U. S. Commission of Fish and Fisheries; Laws and Regulations, 1882.

Very respectfully,

J. J. O'CONNOR,
Chief Clerk.

Hon. M. McDONALD,
U. S. Commissioner of Fish and Fisheries, Washington, D. C.

Q. Will you inform the committee as to Mr. Frank Blaisdell's connection with the U. S. Fish Commission; when appointed; what positions he has occupied; what has been the character of his work; when discharged, and for what reasons? Please give a general statement covering the entire period of his connection with the Commission.—A. Mr. Blaisdell was first employed under the direction of the Commissioner of Fisheries in making a survey in connection with the Great Falls

fishways in June, 1888, and subsequently in making plans and specifications of the modified construction it was proposed to erect. This work was done under the authority of the Secretary of War, and the expenses for the same were paid out of the appropriation for the erection of the Great Falls fishways.

On July 6, 1888, Mr. Blaisdell being then at work in the preparation of the plans and specifications above referred to, I found it necessary, in consequence of irregularities in the administration of the engineer office, to make changes in the personnel of the office, and designated Mr. Blaisdell as the engineer officer of the Commission, intending to confirm him in this position should he show the necessary expert qualifications. This assignment continued until September 11, 1888, when I became satisfied that Mr. Blaisdell lacked the expert qualifications and professional experience necessary to discharge satisfactorily the duties of engineer officer of the Commission. I therefore recalled his appointment as engineer, but continued him on temporary service in connection with the surveys and plans of the new stations which had been provided for by Congress. When these were completed I did not feel that I could with propriety and due regard for the public service continue him on duty at a compensation of \$150 per month. He was neither rapid nor accurate in his work; was ignorant of constructive engineering, yet intolerant of suggestions and control.

Accordingly, on July 5, 1889, I notified Mr. Blaisdell that his services at the then rate of compensation would be discontinued on and after July 7, 1889, and he was assigned to temporary service as draughtsman in the engineer office, under Lieutenant Bayley, at a compensation of \$100 per month. He was continued in this position until May 1, 1890, when he was discharged. In any event his services would have been discontinued with the close of the fiscal year. The immediate occasion of his discharge, however, was a knowledge of the fact that Mr. Blaisdell was engaged in circulating statements to the discredit of the Commission and to the detriment of the public service—statements which the evidence placed before this committee will show to be false in every particular.

The following official communications give the history of Mr. Blaisdell's connection with the U. S. Fish Commission:

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., July 6, 1888.

DEAR SIR: You are hereby assigned to duty as engineer of the U. S. Fish Commission and will take charge of the property, records, maps, etc., of the engineer office and the direction of the personnel thereof, and such others as may be from time to time assigned to duty therein. You will immediately get together all the correspondence relating to the station under construction at Duluth, Minn., with a view to preparing and transmitting promptly such additional instructions as may be necessary for the continuance of the work without interruption or delay.

You are particularly directed to enforce prompt attendance during office hours on the part of all employes under your direction. You will make yourself acquainted with the current work and routine of the office and expedite the completion of the work now in hand.

Your compensation will be at the rate of \$150 per month.

Very respectfully,

M. McDONALD,
Commissioner.

FRANK BLAISDELL, Esq.,
U. S. Fish Commission.

U. S. COMMISSION OF FISH AND FISHERIES,
Wood's Holl, Mass., September 11, 1888.

DEAR SIR: I have determined to discontinue the services of a civil engineer as a part of the permanent force of the Commission, the expense of the maintenance of such office being much larger than is necessary for the engineer work we have. My experience assures me that it is more satisfactory, as well as economical, to employ expert engineer service as needed, you are therefore notified that your services will be discontinued on and after October 1. You will please give like notice to Mr. Lang. The decision I have arrived at in reference to this is based upon my experience as to the needs of the Commission and a due regard to proper economy in the expenditure of public moneys, and not that such duties as devolved upon you have not been satisfactorily discharged. It will give me pleasure to aid you as I may be able to secure such employment as you may find open under other Departments of the Government.

Very truly yours,

M. McDONALD,
Commissioner.

FRANK BLAISDELL, Esq.,
Engineer's Office, U. S. Fish Commission, Washington, D. C.

U. S. COMMISSION OF FISH AND FISHERIES,
Wood's Holl, Mass., September 14, 1888.

DEAR MR. BLAISDELL: The reorganization of the engineer offices and the reduction of force has been determined upon after most careful and deliberate consideration and will be carried out. The routine of the office and the care of the drawings and other property and the ordinary preparation of tracings, etc., involves responsibilities and duties that can be fully discharged by a draughtsman at \$60 or \$75 per month. Expert service involving the employment of a civil engineer is only needed occasionally, when constructions are to be made for new stations, and these emergencies will be provided for as they arise, by the temporary employment of engineers of skill and experience in regard to the particular class of work it is necessary to carry on. When it is in my power to give you work of this character it will afford me pleasure to do so, but most of our work of the kind referred to is of a character in which you have not the experience necessary to prepare the plans. Had you not better make an effort to secure one of the places under the Supervising Architect of the Treasury? Your work has been under the observation of the Architect, and from the close and influential relations which I understand you hold to the principal officials in the office and the influence you can bring to bear you should certainly stand a good chance of appointment to a position which will be permanent and in the direct line of promotion. A civil engineer is not needed on the permanent force of the Commission, such position is in its nature temporary since no occasion for expert engineer service will exist after the plans and construction of the new stations are completed. If I can serve you in any way it will give me great pleasure to do so.

Very truly yours,

M. McDONALD.

U. S. COMMISSION OF FISH AND FISHERIES,
Wood's Holl, Mass., September 29, 1888.

DEAR SIR: I have instructed the disbursing officer that you will be continued on duty at the rate of \$150 per month so long as employed, you will also receive your reasonable expenses while in the field, and will arrange to proceed at once to Bucksport, Me., and report to C. G. Atkins, superintendent of the Craig's Brook Station, and make under his direction surveys, plans, and estimates for the proposed construction at that station.

Very respectfully,

M. McDONALD.

FRANK BLAISDELL, Esq.

U. S. COMMISSION OF FISH AND FISHERIES,
Wood's Holl, Mass., September 29, 1888.

DEAR SIR: In your letter of a recent date you undertake criticisms both of myself and of the employes of the Commission which can be excused only by your want of knowledge of the affairs of the Commission and of the duties, responsibilities, and qualifications of those engaged in its work.

It is true that Mr. Gorham has given me great anxiety and embarrassment at times on account of his occasional lapses from temperance. On the other hand, his thorough knowledge of the stations of the Fish Commission, and of the apparatus and appliances of fish culture in use by the Commission has relieved the Commissioner from that minute attention to the details of construction which would be necessary for him to give if the work was committed to an engineer officer who was without this special knowledge and experience. Mr. Gorham, moreover, as a draughtsman, is rapid, skillful, and accurate, and accomplishes much more work in a given time—work of the highest grade—than any engineer or draughtsman I have had about me. Yet, in consequence of his unfortunate habits, I have felt compelled to discharge him from the permanent roll of the Commission. I shall, however, give him employment in such temporary work as requires expert service, since I feel that the interests of the Government will be thereby promoted.

In placing you in charge of the engineer office I had contemplated continuing you as engineer officer of the Commission. In permitting accounts to be rendered by Mr. Carroll for board in excess of charges heretofore made, you did not exhibit that watchfulness over the interests of the Government which you should have displayed. Upon inquiry I found that the extra charges were made to cover personal expenditures not chargeable to the Government. I overlooked the matter as the result of inadvertence, but it was nevertheless a serious blunder.

Considering the embarrassments that have arisen in connection with our engineering work, and in view of the fact that it is more economical and convenient to employ expert service when needed, I have determined to dispense with a civil engineer as a part of the permanent force of the Commission, and place a draughtsman in charge of the maps and records of the office. I have assigned Mr. Rogers temporarily to this duty. If I find he is not competent I will discharge him and employ some one else. I can not be governed in my determination, however, by statements made in a personal communication from you, upon which it would not be proper for me to take official action. If you, as engineer of the office at the time, will reduce to writing, over your official signature, the statements you have made to me about Mr. Rogers, I will have the matter fully investigated by a board of inquiry on my return to Washington.

Very respectfully yours,

M. McDONALD,
Commissioner.

FRANK BLAISDELL, Esq.,
U. S. Fish Commission, Washington, D. C.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., January 12, 1889.

SIR: You will proceed at once to Neosho, Mo., by the most direct route, for the purpose of making an accurate topographical survey of the tract of land in the vicinity of Neosho, donated to the U. S. Fish Commission for a fish-hatching station. The entire area given to the United States, as well as the portion conveyed under perpetual lease covering the spring and the flow from the spring is to be surveyed. The contour lines indicating the relief of the ground are to be placed not more than 1 foot apart vertically. The water will necessarily have to be carried from the spring by a conduit. This may be either under ground or overhead, and data must be collected with a view to determining which plan for conducting the water is most desirable. It is possible it may be found necessary to raise the level of the water at the spring for the purpose of getting the proper elevation to deliver it to the highest point of the ground, and you are directed to make a special examination and report with reference to the necessity and practicability of this.

Immediately on your arrival at Neosho you will confer with Messrs. Lee D. Bell & Co., real estate agents, informing them of your purpose, and ask their co-operation and assistance in any direction you may find desirable.

Having completed this work you will return at once to Washington, D. C.

Very respectfully,

M. McDONALD,
Commissioner.

FRANK BLAISDELL, Esq.,
Engineer, U. S. Fish Commission.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., April 24, 1889.

DEAR SIR: Mr. W. B. Bayley, Engineer of the Commission, has been placed in direction of all matters relating to the construction of buildings and erection of the necessary plant for the Lake Erie station. You will report to him, and prepare, under his direction, such plans and specifications relating to this station as he may direct.

Very respectfully,

FRANK BLAISDELL, Esq.,
U. S. Fish Commission.

M. McDONALD,
Commissioner.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., June 4, 1889.

DEAR SIR: I will have no further occasion for your services after the completion of the work now in hand under the direction of Mr. Bayley, which work will not probably continue further than the 15th, or at the farthest, the 20th of the present month.

I give you notice in advance in order that you may have time to make your arrangements for occupation elsewhere.

The work upon which you are engaged is under the direction of Mr. Bayley, the Engineer Officer of the Commission, and you will carry out his instructions in all matters relating to the same.

Very respectfully,

FRANK BLAISDELL, Esq.,
U. S. Fish Commission.

M. McDONALD,
Commissioner.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., July 5, 1889.

DEAR SIR: Your services at the present rate of compensation will be discontinued after July 7. Temporary service as draughtsman in the Engineer's Office, under the direction of Mr. Bayley, at a compensation of \$100 per month, will be required for several months. Should you desire to continue on work in the office at \$100 per month you will report to Mr. Bayley on July 8 for assignment to duty.

Very respectfully,

FRANK BLAISDELL, Esq.,
U. S. Fish Commission.

M. McDONALD,
Commissioner.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., August 30, 1889.

DEAR SIR: In reply to yours of August 20, I beg to say that I consider the compensation allowed to you fully equivalent to the grade of service required to be rendered, and I cannot approve of any increase in the same, nor will I be able to continue such service longer than the necessity for it exists.

Very respectfully,

FRANK BLAISDELL, Esq.,
U. S. Fish Commission.

M. McDONALD,
Commissioner.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., September 2, 1889.

DEAR SIR: I am directed by the Commissioner to say that it embarrasses him very much to have to receive personal charges of the character indicated in the inclosed letter. Immediately before the Commissioner's departure from Washington early in July a similar charge was received from Dr. Rust, which was referred to you for explanation, but up to the present time nothing has been heard from you in reference to it.

Yours, truly,

FRANK BLAISDELL, Esq.,
U. S. Fish Commission.

J. J. O'CONNOR,
Chief Clerk.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., April, 4, 1890.

SIR: In reply to the instructions contained in your letter dated April 3, for me to prepare and submit to you a statement of the work Mr. Frank Blaisdell has been and is now engaged on, and also his efficiency and regularity in attendance upon the performance of duties assigned him, I have to say, Mr. Blaisdell was first employed with me in preparing the plans of the building for the U. S. Hatchery at Put-in Bay, Ohio. As to his abilities as an architect, not having had sufficient experience myself in that line, I do not feel qualified to judge. I can say, however, that many faults were found by the builder and contractor in the designs of constructions of the building, making it necessary to go over the plans and make many changes before the construction of the building could be carried out.

Mr. Blaisdell was subsequently employed under my directions in making the plans and specifications for the steam and water distributing plant for the same building. He is now employed in making the outline drawings of a steamer for Put-in Bay. As a mechanical draughtsman, while his work is neatly done, it is evident he has had no experience in designing machinery.

In regard to his regularity in attendance, since my last report to you on this subject, dated February 15, I have no cause to complain.

Respectfully,

W. B. BAYLEY,
Past Assistant Engineer, U. S. Navy.

HON. MARSHALL McDONALD,
U. S. Commissioner of Fish and Fisheries.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., April 26, 1890.

SIR: Your services as draughtsman will not be required beyond the close of the current month and your compensation will cease on and after May 1, 1890.

Very respectfully,

M. McDONALD,
Commissioner.

F. BLAISDELL, Esq.,
U. S. Fish Commissioner.

Q. You stated when before the committee previously that you would make, if desired, a connected statement in regard to the Great Falls fishways. Are you prepared to do so now?—A. Yes, sir. I have here arranged in proper sequence the correspondence between the Secretary of War, the Chief of Engineers and others, and the U. S. Commissioner of Fisheries, in reference to the Great Falls fishways, and also reports that were made from time to time in regard to the progress and condition of the work. These I will submit in regular order, prefacing each with such statements as will give a full and connected history of this work.

THE GREAT FALLS FISHWAYS.

The importance of providing fishways at the Great Falls of the Potomac with the object of extending the spawning grounds of the shad and herring and thus aiding natural reproduction, was formally brought to the attention of Congress by Professor Baird, the U. S. Commissioner of Fisheries, in June, 1882. Acting upon his recommendation an amendment appropriating \$50,000 for this purpose was incorporated in the bill making provisions for increase in the water supply of the city of Washington, which became a law July 12, 1882.

The bill further provided that the same should be erected in accordance with plans and specifications to be furnished by the Commissioner of Fish and Fisheries. The importance of the work proposed in the interest of the fisheries, the expediency and propriety of the General

Government undertaking it, and the measures taken to carry out the provisions of the law so far as they related to the Commission of Fisheries, are detailed by the Commissioner in his annual report for 1882, as follows (p. 49, *et seq.*):

22.—NEED OF A FISH-WAY AT THE GREAT FALLS OF THE POTOMAC.

The importance of maintaining at their maximum of production the valuable fisheries of the Potomac can hardly be overestimated, in view of the extent to which they furnish food for home consumption and for transportation, and also of their agency in reducing the expense of living to the poorer portion of the population. The fish involved in this consideration are the shad, herring, rock, white perch, and black bass, together with other fish coarser in quality and lower in price.

Old records dating back to colonial times bear testimony to an abundance of production, which, read in the light of present experience, seems little short of marvelous, although after all credible when we consider the favorable conditions for natural production which were then afforded.

The broad estuary of the Potomac River, extending for a distance of more than 100 miles, from Point Lookout to the Great Falls, offered through its whole length numerous flats and bars where the shad could spawn, rarely molested by the intrusion or device of man. Its reedy shores and extensive tracts of marsh land, covered with aquatic grasses, furnished everywhere a nidus and a nursery for the countless million of eggs of the glut herring (*Pomolobus stivalis*).

Into the numerous creeks tributary to the main river, which have their origin in the swamps of the interior, the branch herring (*Promolobus vernalis*) entered to find at their sources a suitable resting place for its eggs and a safe habitat and temporary abiding place for its young.

How the hand of man has changed all this will be evident from the following considerations: Access to the sources of the smaller tributaries of the Potomac, which drain the tide-water region, has been almost universally barred by mill-dams placed at the head of tide. The conversion of the woodland along their banks into arable fields has rendered turbid their once clear waters, and with every rain a muddy torrent is sent down, loaded with fine sediment, which settles upon and stifles every embryo of shad or herring which may have found a resting place in the reaches below tide level. In addition, fykes and stake nets, weirs and pound or trap nets bar access of mature fish to these streams almost as effectually as the dams prevent their ascent.

In the main river the favorable natural conditions which formerly existed have disappeared before the encroachments of man. Cities have grown up along its banks which each year discharge into its waters an increasing volume of sewage, gas tar, and other deleterious substances to pollute the water and render it unfit for healthy development of the eggs that may be deposited. Large seines occupy every reach where the fish congregate to spawn, or stretch their broad arms across the channel to intercept the schools of shad and herring in their upward migrations. From every headland pound nets stretch their meshes a thousand feet or more from shore to guide the unwary fish into the traps, which are set on the edge of, and often in, the navigable channel.

Hundreds of gilliers, with nets a hundred fathoms long, stretched across the channel, drift up and down, on ebb and flood, unceasingly, and with their fine-spun nets, almost invisible, obstruct ascent as effectually as if strong dams of stone or timber barred the passage.

Such being the condition of things on the Potomac at the present time, the conclusion was readily reached that if the spawning-grounds of the shad and herring could be enlarged by taking in the long reaches of river that lie above the Great Falls a great gain could be secured. This, however, could only be done by providing convenient passage for them over or around this obstruction.

Accordingly, when the necessity of an increased water supply for the city of Washington was brought before Congress by the Commissioners of the District of Columbia, I addressed a letter to Maj. W. J. Twining, then Engineer Commissioner of the District, calling his attention to the propriety of including, in any proposition for the completion of the dam at the Great Falls, the construction of a suitable fish-way to admit the ascent of shad, salmon, striped bass, herring, sturgeon, etc., to the upper waters of the Potomac River. Subsequently, in response to the invitation of the Committee on the District of Columbia in the House of Representatives, I addressed them the following communication:

U. S. COMMISSION FISH AND FISHERIES,
Washington, D. C., June 1, 1882.

Hon. HENRY S. NEAL,

Chairman Committee on District of Columbia, House of Representatives :

DEAR SIR: In response to the inquiries made by your committee through the honorable Mr. Garrison, I would submit the following:

In 1871, in compliance with an act of Congress, I was designated by the President to conduct an inquiry into the causes operating to diminish the supply of food-fishes on the sea-coast and the lakes of the United States. The investigations had made but little progress before I became convinced that the obstructions in our rivers, whilst not the only cause, were one of the main factors in determining the reduction in the numbers both of the anadromous fishes, such as the salmon, shad, and herring, and the salt-water species, the food of which consists largely of the anadromous species referred to. In the case of the salmon, shad, and herring (alewives) the effect was direct and immediate. The obstructions in some rivers have entirely excluded these fishes from their spawning-grounds, rendering the waters barren in a few years; in others the reduction in the spawning areas has entailed a corresponding diminution in the productive capacity of the river, and caused important and remunerative fisheries to become comparatively valueless.

In the case of the salt-water predaceous species, the effect of obstructions in the rivers, whilst indirect, has been not the less potent in effecting a reduction of their numbers by diminishing their food supply.

In my annual reports to Congress I have had frequent occasion to revert to the disastrous effects of dams in our rivers in determining a reduction in the supply of our more important food-fishes, and to urge the erection of fish-ways as a most important and indispensable adjunct to the restoration of our fisheries by artificial propagation, a work so wisely inaugurated and so beneficently sustained by liberal appropriations.

Usually the work of construction of fish-ways may appropriately be left to the States themselves, or to the coercion of State laws brought to bear upon the owners of dams. In those cases, however, where the General Government has created or maintains obstructions in our streams it seems eminently proper and in essential harmony with the work of artificial propagation, inaugurated and sustained by the Government, that suitable provision should be made to provide sufficient passageway for fish over the obstructions.

My views in regard to the expediency and propriety of the General Government undertaking the work at the Great Falls have already been expressed in a letter to the Commissioners of the District, a copy of which is inclosed for the information of your honorable committee.

I can only add to the argument presented in that letter that the water supply requisite for the fish-way will be necessarily under the control of the District government, and must be subordinated to the necessities of the water supply of the District. This renders it necessary that the fish-way, when built, should be operated subject to the entire control of the authorities of the District government.

I may state in conclusion that the opening of the upper waters of the Potomac and its tributaries to the ascent of fish can not have other than a most beneficial effect upon the production of the river. That such a result may be attained there is no reason to doubt. The difficulties that may present themselves are mainly those of construction, and are entirely within the resources of the engineer to overcome.

I have the honor to be, very respectfully,

S. F. BAIRD,
Commissioner.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., March 24, 1882.

DEAR SIR: I would respectfully suggest the propriety of including in any proposition for the completion of the dam at the Great Falls the construction of a suitable fish-way to admit the ascent of shad, salmon, striped bass, herring, sturgeon, etc., to the upper waters of the Potomac River. Prior to the building of the original dam, it was possible for many of these varieties of fish to reach their spawning-grounds; but of late years this has been rendered impossible, and, consequently, the supply has most materially decreased. Many of the fish of the Potomac must have access to the upper waters of the river for the propagation of their kind, suitable spawning-grounds not occurring below the dam.

Inasmuch as the injury above alluded to was brought about by an act of the United States, it seems eminently proper that the same agency should remedy the difficulty, especially as the locality where such fish-way alone can be built is the property of the United States. The legislatures of Maryland, Virginia, and West

Virginia are highly in favor of the improvement in question, and I see no impropriety in the granting of this proposition.

At the proper time I shall be happy to furnish a plan of construction upon the most feasible and efficient scale. The expense of this additional work will make but a small item in the total. It is important that for such construction some such proviso as that below should be added to the bill as it now stands.

Yours, very respectfully,

S. F. BAIRD,
Commissioner.

Maj. W. J. TWINING,
Engineer Commissioner, D. C.

"Provided, That a suitable construction shall be built to admit of the upward passage, at all seasons of the year and at all stages of the water, of shad, salmon, herring, striped bass, sturgeon, etc., the same to be erected in accordance with the plans to be furnished by the U. S. Commission of Fish and Fisheries."

The committee accepted these recommendations, and reported to the House the original bill amended, so as to provide for suitable fish-ways at the Great Falls of the Potomac.

The bill, which became a law July 12, 1882, appropriated \$50,000 for the construction of the fish-ways, and directed that the same should be erected according to plans and specifications to be furnished by the United States Commissioner of Fish and Fisheries.

Immediately after the appropriation became available, I detailed Col. M. McDonald, chief of the division of distribution in the U. S. Fish Commission, to take charge of the preparation of the plans and specifications, and to proceed at once to arrange for the necessary surveys. Colonel McDonald reported to Maj. G. E. Lydecker, Engineer Commissioner, in October, and was authorized by him to organize a field party and complete the necessary surveys, the expenses being certified to him for payment.

Mr. F. S. Eastman was designated as chief of the field party, and, in company with Colonel McDonald, made a reconnaissance of the ground. This developed four practicable sites for the erection of the fish-way. The one immediately at the Great Falls on the Maryland bank of the river was definitely determined on for reasons given by Colonel McDonald in his report.

The necessary minute survey of the site selected was deferred from time to time in consequence of the serious indisposition of Mr. Eastman; and the fatal termination of his illness making it necessary to secure the services of another engineer, Professor Hilgard, Superintendent of the United States Coast and Geodetic Survey, kindly detailed Mr. Eugene Ellicott, one of his staff of field assistants, for the purpose. Unavoidable delays threw the field work into the most inclement season of winter, and necessitated the maintenance of the party in the field for a longer time, and adding proportionately to the cost of survey. This work is now completed, and the map of the site proposed submitted. The preparation of the plans and specifications will proceed as rapidly as is consistent with the careful study of all the conditions involved, and an observance of the requirements necessary to insure ultimate success.

In his annual report of the following year (1883, p. lxxii), the Commissioner of Fisheries, Professor Baird, reports progress as follows:

FISH-WAY OVER THE GREAT FALLS.

Reference has been made to this work in a previous report. Since then the surveys of the Great Falls have been completed, and a site has been selected for the construction of a suitable fish-way, which will enable shad, striped bass, and other food-fishes to ascend to the upper portion of the Potomac.

After careful consideration of the different varieties of construction offered, a plan of fish-way, suggested by Colonel McDonald, has been adopted, and he has been instructed to have prepared the necessary working drawings for the purpose, to be submitted to the contractors for estimates. Should these be within the appropriation, it will be recommended to the Secretary of War for such further action as he may think proper.

On June 2, 1884, I made a report to the Commissioner, submitting plans and specifications of the fish-ways for the Great Falls of the Potomac River, which were approved by him and transmitted to the Secretary of War.

The annual report of 1884 contains no reference to the Great Falls fish-ways, but the report of the following year (1885, p. lxxiii), gives a résumé as follows:

FISH-WAY OVER THE GREAT FALLS.

Reference has been made to this work in previous reports. Since then a site has been selected for the construction of a suitable fish-way, which it is hoped will enable shad, striped bass, and other food-fishes to ascend to the upper portions of the Potomac.

A plan of fish-way suggested by Colonel McDonald, who prepared the necessary working drawings for the purpose, was adopted and recommended to the Secretary of War for such further action as he might think proper.

A contract having been given out by the direction of the Secretary of War for the construction of the fish-way, work was pushed forward during the summer of 1885. The conditions of the contract required the entire work to be completed on October 31 of the present year. Five sections were at that date in process of construction, and high water occurring about that time found none of the six sections completed, and put an end to the work for the season. The lowest or sixth section was most advanced towards completion, needing only the setting of the line of coping provided for in the plans and specifications to insure the permanence and durability of the construction. It suffered little or no injury from the ice of the winter, and needs only to be completed as planned to render this part of the construction permanent.

The work remaining to be done at the end of the year is as follows:

(1) The erection of a weir-dam about 40 feet long and 5 feet high from the abutment of the fish-way to the opposite shore, the object of this being to regulate and control the supply of water to the fish-way and at the same time to provide for the discharge of surplus water.

(2) Cleaning out the channel below the (proposed) weir-dam, so that the water flowing over the dam may be discharged into the river below by the side of the fish-way instead of over the lower end, as is now the case.

(3) Placing and securing of the 12-inch coping to cover the rubble masonry walls forming the sides of the fish-way.

(4) The removal of the loose rock piled up at the lower end of the fish-way and excluding fish from access to it.

The matter will be brought to the attention of the Secretary of War in the spring of 1886, with the request that at least section 6 be completed at once. An additional appropriation may be required for completing the other sections.

The report of the Commissioner refers only inferentially to the suspension of the work in consequence of the damage occasioned by the high water occurring October 31, 1885.

December 17, 1885, Maj. J. G. Lydecker transmitted to General J. B. Newton, Chief of Engineers, "a report by Capt. T. V. Symons, corps of engineers, of an examination made by him into the conditions of the fish-ways at the Great Falls, with reference to the effect of the flood in the Potomac following the several days of heavy rain-fall in the latter part of October," as follows:

OFFICE OF THE WASHINGTON AQUEDUCT,
Washington, D. C., November 5, 1885.

MAJOR: I have the honor to report that yesterday I made an examination into the condition of the fishways as far as the high water would permit.

Sections 2, 3, and 4, which were in process of construction, are still covered with water, and it is impossible to determine at present the extent of damage done to them by the high water.

It will not be practicable to examine these sections until the water goes down very much or the deflecting dams are rebuilt. Section 5 was nearly completed. The side-walls were completed with the exception of a very few stones, the coping, and the through bolts. All else was completed, the iron and timber work being in place and thoroughly bolted together and to the bottom and side-walls.

It has been almost completely destroyed. The side and head walls have been torn away and the mass of timber and iron lifted bodily, turned completely over and deposited bottom upward on the rocks about a hundred yards further down the river, near section 6. An examination of this work indicates that before it gave way and was uprooted it suffered greatly from the action of the water and the water-borne bodies coming in contact with it. The floor was badly cut and broken, the grating bent and the ends pulled out and broken off, and the upper ends of the cell partitions bruised and battered into broom-like condition. It is my opinion that had No. 5 remained in place it would have been so badly damaged that its efficiency as a fishway would have been materially interfered with.

Section 6 escaped with comparatively little injury, as far as can be now ascertained.

This section is protected by the backing up of the water from the main channel of the river and thus deadening the currents down the Maryland channel and by the deflection from it of the main currents of the Maryland channel, which in high water run to the east of it. The wreck of No. 5 lies considerably to the east of the line joining the location of 5 and 6.

The temporary deflecting dam above section No. 2, which deflects the water coming over the Aqueduct dam from the Maryland channel, has been very badly injured, large sections being carried away. This deflecting dam is necessary to allow the work to be carried on in any of the sections below the first.

It is now so late in the season that it is doubtful if this dam could be repaired and any work done on the lower sections this season. This must then be considered as the close of the season's operations on the fishways. The contractor has really done about three-fourths of the entire work of constructing the fishways.

The high water resulting from the storms of October 29 and 30 has carried away a large part of this work, including the whole of section 5. The remaining portions must be left in an unfinished condition during the coming winter and spring, subject to the floods and floating ice incidental thereto. It is highly probable that what has been done will be in a very large measure destroyed before another season's work can commence, and the work of building the fishways will practically have to commence again.

This would seem to be a proper time to consider the facts and lessons learned during the progress of the work up to the present time and the conclusions to be derived therefrom.

Ever since the actual work of construction began the impression has been growing upon me that the fishways, as planned, were not of sufficient strength to withstand the terrific strains that would be brought on them. In the construction of nearly every section greater strength was given than was provided for in the plans. Authority was requested from the Commissioner of Fish and Fisheries, through Colonel McDonald, the designer, to double the thickness of all masonry side-walls unsupported by natural rock side-walls, and to triple the thickness of the masonry in the overflow dam. This authority was granted; it was about all the modification that could be attempted with the expectation of completing the work with the money available for the purpose. Besides this, concrete was substituted for rubble about the head-walls, and the dimensions of the stones in the masonry walls were many times the size required by the specifications.

Notwithstanding everything that was done, the section of the fishways that was practically completed was unable to stand the first flood that came, and to my mind the evidence is conclusive that the fishways as planned are totally inadequate in strength and general character for the purposes intended, and that every cent which is further expended on them will be wasted, unless very material modifications are made in the plans, involving the expenditure of large amounts of money, two or three times the amount of the original appropriation.

To make the fishways as planned and located safe and efficient, the amount of water reaching them must be regulated in such a manner as to keep from them all heavy floods and masses of floating ice and timber and to so regulate and control the flood waters of a river like the Potomac would require work of the most solid character, costing large sums of money.

On the other hand, if the fishways are built with a view to withstand the action of the river in times of flood, the plan of the work must be very materially changed and far more solid and expensive methods of construction adopted.

I beg to submit this report to you in order that a decision may be arrived at as to further action in the matter.

Very respectfully, your obedient servant,

THOMAS W. SYMONS,
Captain of Engineers, U. S. Army.

Maj. G. J. LYDECKER,
Corps of Engineers, U. S. Army, Washington, D. C.

A copy of this report was forwarded by the Chief of Engineers to the Commissioner of Fisheries for his information.

The Commissioner replying under date of January 16, 1888, acknowledges the receipt of the report referred to, and transmits the report of Marshall McDonald in reference to the same matter, as follows:

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., January 16, 1886.

GENERAL: On the receipt of the report of Capt. T. W. Symons as to the condition of the Great Falls fishway, which you were kind enough to send me, the papers were referred to Mr. Marshall McDonald, under whose supervision the plans approved and submitted by me were prepared.

The McDonald fishway was adopted, as in my opinion its form produced the conditions of current favorable to the ascent of fish in a more perfect manner than any other form which had heretofore been devised.

That the condition of current produced by a fishway when completed on the design submitted would be favorable to the accomplishment of the ends desired, was the limit to which I could undertake to express an opinion. The details and supervision of the construction were necessarily left to the Engineer Department.

I beg to forward herewith the report of Mr. McDonald as embodying his opinion formed after a careful personal examination of the work.

The importance of having a fishway of the form recommended, at the Great Falls, is so great that I can not too strongly urge that the matter be carefully considered, and, if possible, the damage repaired and the work completed.

If the means appropriated are not sufficient I trust that an estimate will be submitted to Congress for the completion and protection of the fishway.

Very respectfully,

SPENCER W. BAIRD,
Commissioner.

Brig. Gen. JOHN NEWTON,
Chief of Engineers, U. S. Army, Washington, D. C.

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., January 13, 1886.

DEAR SIR: I respectfully return herewith copy of letter of Major G. J. Lydecker, U. S. Engineers, dated December 17, 1885, and addressed to Brigadier-General John Newton, Chief of Engineers, U. S. A., transmitting "a report by Capt. T. W. Symons, Corps of Engineers, of an examination made by him into the conditions of the fishways at the Great Falls, with reference to the effect of the flood in the Potomac following the several days of heavy rain-fall in the latter part of October."

The conclusion arrived at is that the "Fishways as planned, are totally inadequate in strength and general character for the purpose intended."

Major Lydecker, in his letter of transmittal, substantially indorsed the conclusions arrived at by Captain Symons, and approves the recommendations made by him.

On the 12th of November, some days after the inspection upon which he based his report, was made by Captain Symons, I visited the Great Falls and made as careful an examination of the condition of the fishways and of the damage done by the flood, as the high stage of water permitted.

The condition of the work and the extent of damage done I found to be as reported by Captain Symons. But the conclusions reached by me, from a careful study of the nature and extent of the damage done by the flood, are entirely opposed to those expressed by Captain Symons in his report.

The damage which must necessarily and inevitably occur, where a structure is exposed to the violence of floods and drift when in an incomplete and vulnerable condition, furnishes no criterion by which to judge of the solidity, strength, and permanence of this same structure, when completed.

The entire evidence, therefore, upon which Captain Symons rests to support his conclusions that "The fishways, as planned, are totally inadequate in strength and general character for the purposes intended," is the fact that the iron and timber superstructure of No. 5 was torn from its stone foundations and hurled, like a giant catapult, one hundred yards down the stream.

An inspection of this vast mass of timber and iron, as it lies stranded and bottom upwards upon a ledge of rock, will furnish to any competent engineering expert most conclusive and convincing evidence of the strength of the construction of the superstructure, or fishway proper.

Though indented and battered and splintered in parts by the mass of debris sent whirling down the stream by the breaking of the temporary deflecting dam, and by the massive blocks of stone which were to furnish the material for the coping of the guard or side walls, yet the only material damage was the shivering or splintering of the exposed ends of the wooden cell partitions—a result to be expected, since the heavy coping stones, which in the completed structure would, by their strong projection, have protected the ends of the cell partitions from the concussion of drift material, were not in position when the flood came on.

This line of heavy coping stones capping the guard walls of rubble masonry and protecting them from abrasion and disintegration, would have proved, as it was designed to be, the key to the strength, solidity, and permanence of the whole structure.

Firmly bound by wrought-iron bolts to the solid masonry below (see accompany-

ing general plan), they could not have been wrested from their position by any force not sufficient to pick up and transport en masse the entire wall. And as long as the line of coping remained intact, it would have been impossible for the iron and timber superstructure to be torn bodily from its foundation and carried down the stream.

The remarkable and exceptional strength of the *superstructure*, built strictly in accordance with the plans and specifications approved by you, is attested by the fact that the construction gave way along that plane where it should have been by many odds the strongest, and where it would have been the strongest had sufficient and evident measures been taken to secure the superstructure to its foundations.

This will be evident by reference to the general plan (a copy accompanies this letter), in accordance with which all the sections were designed.

The location of the fishway section having been determined upon, the requisite grade was established either by cutting or concrete filling, or both, so as to form an inclined plane rising 1 foot in 6.

Resting upon the incline, and extending from outside to outside of the fishway, are sills of timber 6 inches square. These are placed at distances of 4 feet from center to center, and are to receive the lower floor of the superstructure. They are firmly secured to the solid rock or concrete below by wrought-iron expanding bolts, and are, moreover, weighted down by the mass of masonry in the retaining or side walls.

The intervals between the sills were to be filled flush with concrete, so as to furnish a perfectly smooth and even slope to receive the lower flooring of the superstructure of the fishway.

Had the bolts which secured the sills to the foundations of solid rock or concrete been of sufficient length and properly expanded, it is certain that the bond of iron to stone would have been the last to yield to force.

The fact that the rupture or lesion took place along what should have been the plane of greatest strength by the drawing of the anchoring bolts out of the rock and concrete, indicates that the catastrophe to No. 5 is to be attributed to the defective execution of the plans given, rather than to defects in the plans themselves.

This conclusion is fully borne out by an inspection of the wreck of No. 5. The bolts used to secure the sills to the foundations are of uniform length, whether the foundations were of solid rock or of concrete. In those parts where the foundations were solid rock, as was the case in the lower part of Section V, the bolts were long enough probably to give a firm bond, if properly expanded; but where set in green concrete, as most of them were, ordinary engineering precautions should have suggested increasing the length as well as adopting efficient means for strengthening the bond between bolt and concrete.

It was not only at the discretion of the engineer in charge of the construction to do so, but it was his duty to adopt such additional means of guarantying the solidity of the construction as his judgment and experience showed to be necessary.

Again, the bolts used were the ordinary split bolts, and most of them bear no marks of ever having been expanded. Indeed it is doubtful if it were practicable to expand them, where they were forced into holes drilled in green concrete.

A fair review of the statements submitted above, and a reasonable interpretation of those contained in the report of Captain Symons, warrants the following conclusions:

I. That it is not known that sections 2, 3, or 4 (no work had been done on No. 1) have suffered material injuries or damage from the flood in the Potomac River in the latter part of October and 1st of November, the continuous high water since having prevented any examination.

II. That the work on them was at that stage when it was most exposed to injury by flood; and it is to be expected that they have been more or less damaged, but such damage under like circumstances is inevitable in all constructions not thoroughly protected from floods.

It is one of the risks which the contractor takes, and for which he estimates, or should estimate, in making his bids. The damage, or even the destruction of works in progress, by floods, does not imply any defect in the plans and specifications of the work.

III. That the timber and iron superstructure of No. 5 was in place, and the guard walls or rubble masonry almost complete; but the heavy coping which was to form the top course of these walls and be thoroughly bound to them and the solid rock below by wrought iron through bolts, thus forming the secure bond and key to the strength and solidity of the construction, was not in position, and the work was therefore in such an exposed condition that serious damage was to be expected from high water; and therefore nothing can be predicated by reason of such damage as to the strength, solidity, and permanence of No. 5, when completed according to the plans and specifications furnished by the Commission of Fisheries.

IV. That the uprooting of the superstructure of No. 5 from its foundations took place along what was, or should have been, the plane of greatest strength, and it is to be attributed to the fact that the means adopted to secure the superstructure

to its foundations were inadequate and not such as even ordinary engineering precautions would have dictated.

V. The floating timbers and massive blocks of stone which were whirled down the Maryland channel by the flood, and which ground and pounded their way over the fish-way sections, were either the debris of the broken temporary deflecting dam or blocks of stone which had been piled up in the vicinity of the fish-way sections to furnish material for masonry constructions.

The set of the current of the flood water was along the location of the overflow channel which was to be excavated to carry off excess of water from the fish-way sections, but which was not completed when the flood came.

The drift brought down by the high waters from above followed the set of the current, little or none passing over the fish-way sections.

Had the work been completed when the flood came and the bond of masonry and concrete hardened and consolidated by exposure, and all loose material removed from the site of the fish-ways, as provided for in the contract and specifications, the completed structure would have been exposed to the force of water alone and would doubtless have stood the flood with little or no damage.

VI. The construction of a permanent deflecting dam on or about the site of the present temporary construction will, as suggested by Captain Symons, completely protect all the sections below No. 1 from drift or high water, and as such dam could be built in great part of trussed timbers, the cost of it need not be very considerable.

I would therefore suggest the advisability of recommending to the Chief of Engineers that immediate steps be taken for the construction of the permanent deflecting dam above referred to, and that meanwhile the work of construction of the fish-ways under the existing contract be suspended, the contract terminated, and equitable settlement made with the contractor for work and material already furnished, and estimates made and submitted for the additional appropriation necessary to complete the fish-ways and auxiliary constructions.

Very respectfully,

MARSHALL McDONALD,

In charge surveys, plans, and specifications, Great Falls Fishway.

Prof. S. F. BAIRD,

U. S. Commissioner, Fish and Fisheries, Washington, D. C.

In May, 1886, under instructions of the Commissioner, I visited the Great Falls of the Potomac for the purpose of observing the working conditions of the sixth or lower section of the fish-ways, and reported as follows:

U. S. COMMISSION OF FISH AND FISHERIES,

Washington, D. C., May, 1886.

DEAR SIR: In obedience to your instructions I proceeded to the Great Falls of the Potomac May the 3d to make the necessary arrangements for observing the working conditions and efficiency of the sixth or lowest section of the series of fish-ways now under construction there.

The construction of the fish-ways was carried on under a contract, the conditions of which required that the entire work should be completed on the 31st of October, 1885. The high water occurring about that date found none of the six sections constituting the series of fish-ways completed. Five sections were under construction and in a condition to be damaged by the high water. The lowest or sixth section was most advanced toward completion, needing only the setting of the line of coping provided for in the plans and specifications to insure the permanence and durability of the construction.

A careful examination of number six shows that it has suffered little or no injury from the floods and ice of the past winter, and that it is in perfect working condition and needs only to be completed as planned to render this part of the construction permanent.

The work remaining to be done is as follows:

(1) The erection of a weir-dam about 40 feet long from the abutment of fish-way to the opposite shore, the object of this being to regulate and control the supply of water to the fish-way, and, at the same time, to provide for discharge of the surplus water.

(2) To clear out the channel below the weir-dam, so that the water flowing over the dam may be discharged into the river below by the side of the fish-way, instead of over the lower end, as is now the case.

(3) Placing and securing of the 12-inch coping to cover the rubble masonry walls forming the sides of the fish-way.

(4) The removal of the loose rock now piled up at the lower end of the fish-way and excluding fish from access to it.

This work may be undertaken at once and, if prosecuted actively, may be finished in time to have a thorough test of the efficiency of the fish-way the present season.

The most expensive part of the work will be the coping. This, however, is necessary for the permanence of the fish-way, and not for its proper working, and its setting may be deferred until low water during the summer.

The construction of the waste-weir and the removal of rock from the overflow channel, and the foot of the fish-way is necessary to secure the proper working of the fish-way.

This work is of such character that it can be best done by day labor, under a competent superintendent. There is, I am informed, still unexpended and available of the appropriation about \$10,000; and I respectfully recommend that the matter be brought to the attention of the honorable Secretary of War, with the request that he will authorize or direct the completion of number six in accordance with the plans and specifications.

Very respectfully, your obedient servant,

M. McDONALD.

Prof. S. F. BAIRD,

U. S. Commissioner of Fish and Fisheries, Washington, D. C.

In transmitting copy of this report, the Commissioner of Fisheries, under date of June 9, 1886, addressed the honorable Secretary of War as follows:

WASHINGTON, D. C., June 9, 1886.

SIR: A year or two ago Congress made an appropriation of \$50,000 for the placing of a fishway at the Great Falls of the Potomac, for the purpose of allowing the upper passage of migrating fish in a locality owned by the United States, the selection of a plan to be made by the U. S. Fish Commission, and the work to be carried out by the United States engineers.

After carefully considering all the known methods, I finally selected a plan invented by Colonel McDonald, an officer of the Fish Commission, and the estimate for its construction coming within the amount of the appropriation, I reported the fact to the War Department, which had the matter put in hand under the direction of the United States engineers.

Owing to very heavy rains supervening before the sections of the fish-way could be properly strengthened, a considerable amount of damage was done to the work, and operations have remained in abeyance for some time past. I directed Colonel McDonald to visit the locality, and make a report upon the present condition of the work, which I herewith submit to you for your information.

If there is no good reason to the contrary, I would respectfully ask that the work be continued, at least to the extent of completion of the lowest section; as by this means we shall be able to determine whether it will actually answer its proposed purpose. I understand that there are sufficient funds in hand for doing this, and it is probable if more are required to complete the entire work they can be obtained from Congress.

Very respectfully, your obedient servant,

S. F. BAIRD,
Commissioner.

Hon. W. C. ENDICOTT,
Secretary of War.

The action taken in reference to the recommendation of the Commissioner of Fisheries is shown by the following correspondence:

WAR DEPARTMENT,
Washington City, July 8, 1886.

SIR: I have the honor to acknowledge the receipt of your letter of the 9th ultimo, inclosing a copy of a report of Col. Marshall McDonald, of the U. S. Fish Commission, in regard to the present condition of the fish-way of the Great Falls of the Potomac, the construction of which was commenced last year under the direction of Maj. G. J. Lydecker, Corps of Engineers, but upon which operations have been suspended for some time past, and requesting that the work be resumed, at least to the extent of completion of the lowest or sixth section of the fish-way.

In reply I beg to invite your attention to the inclosed copies of reports of the 23d ultimo from the Chief of Engineers, and of the 14th and 19th ultimo from Major Lydecker, on this subject.

I have approved the recommendation of the Chief of Engineers "that work upon the sixth section of the fish-way, together with the other work referred to, be commenced at the earliest practicable moment and prosecuted to completion in accordance with the provisions of section 3709, Revised Statutes."

Very respectfully, your obedient servant,

WM. C. ENDICOTT,
Secretary of War.

Prof. SPENCER F. BAIRD,
*Commissioner, U. S. Commission of Fish
and Fisheries, Washington, D. C.*

OFFICE OF THE WASHINGTON AQUEDUCT,
Washington, D. C., June 14, 1886.

GENERAL: I have the honor to acknowledge the receipt of letter from the Acting Chief of Engineers dated June 9, 1886, relative to the fish-ways at the Great Falls of the Potomac, requesting that an examination be made as soon as the stage of water will permit, with a view to reporting upon their present condition and submitting an estimate of the cost of their reconstruction.

On the 12th instant I visited the site of the work, and have now the honor to report that, preparatory to the proposed examination, it will be necessary to reconstruct the temporary deflecting dam which diverted the flow from the Falls branch of the Potomac, in which the fish-ways are located. Until this is done the fish-ways will remain submerged at any stage of the river. With this purpose in view I have this day made application for a remittance of \$500 to defray the cost of the work, which will probably be from \$300 to \$500, depending upon the varying stages of the river during the period of reconstruction.

When the fish-ways become exposed to view I will confer with the U. S. Commissioner of Fish and Fisheries, and ascertain what modification of the original plan of construction may be considered advisable by him in the work of restoration and completion.

Very respectfully, your obedient servant,

G. J. LYDECKER,
Major of Engineers, U. S. A.

Brig. Gen. JOHN NEWTON,
Chief of Engineers, U. S. A., Washington, D. C.

OFFICE CHIEF OF ENGINEERS, U. S. ARMY,
June 23, 1886.

Respectfully submitted to the Secretary of War, referring to and in connection with the report of Maj. G. J. Lydecker, Corps of Engineers, upon the communication of the Commissioner of Fish and Fisheries, this day submitted, and with recommendation that the reconstruction of the deflecting dam which diverted the flow from the Falls branch of the Potomac, in which the fish-ways are located, be authorized at the estimated cost given.

JOHN NEWTON,
Chief of Engineers, Brigadier and Brevet Major-General.

OFFICE CHIEF OF ENGINEERS, U. S. ARMY,
June 23, 1886.

Respectfully returned to the Secretary of War, inviting attention to the following copy of the report of Maj. G. J. Lydecker, Corps of Engineers, to whom it was referred.

It is recommended that work upon the sixth section of the fish-way, together with the other work referred to, be commenced at the earliest practicable moment and prosecuted to completion in accordance with the provisions of section 3709, Revised Statutes.

OFFICE WASHINGTON AQUEDUCT,
Washington, June 19, 1886.

"Respectfully returned to the Chief of Engineers, U. S. A.

"To complete the sixth section, and to do the other work suggested in the inclosed report by Mr. Marshall McDonald, will be a simple matter as soon as the flow of water through the Falls branch is interrupted, as proposed in my letter of the 14th instant. The unexpended balance of the appropriation for the fish-ways is \$9,376.31.

"This section is much less liable to damage from freshets, drift, etc., than any of the others, and when completed will afford a good test of the practical working of the system. I most respectfully recommend that the work be commenced at once, as requested by the Commissioner of Fisheries. It is recommended further that the work be done by hired labor, as it will not be practicable to specify in advance what is necessary to be done.

"G. J. LYDECKER,
"Major of Engineers, U. S. A."
JOHN NEWTON,

Chief of Engineers, Brigadier and Brevet Major-General.

The status of matters relating to the Great Falls fish-ways on June 30, 1887, is described by the Chief of Engineers in his annual report for the fiscal year 1887 (pp. 335, 336), as follows:

ERECTION OF FISH-WAYS AT GREAT FALLS OF THE POTOMAC.

No work was in progress on the fish-ways at the beginning of the year, operations having been suspended in the fall of 1885, in consequence of the destruction of the greater part of them by floods.

During the months of August and September, 1886, the dam which intercepted the flow of water through the channel in which the fish-ways were located was rebuilt, and at the request of the Commissioner of Fisheries the sixth section was restored and completed in order to test the practical working of the system. It is assumed that the result will be duly reported by the United States Commissioner of Fisheries, and that he will likewise take action looking to the completion of the other sections.

The officer in charge of the work of construction is of the opinion that it will cost upwards of \$50,000 to complete the fish-ways in such substantial manner as to withstand the violent floods of the Potomac, but it is presumed that the estimate for this purpose will be submitted to Congress from the office of the Fish Commissioner, as in the case of the original appropriation.

In this connection attention is invited to the following extract from the report of Maj. G. J. Lydecker, Corps of Engineers, under whose direction the work of construction has been done.

I do not understand that this department is called upon to submit any estimate for this purpose; nor does it appear, in fact, that there has been any specific legislation devolving the construction of these fish-ways upon the War Department, though the intent of Congress has been so construed; the appropriation for the work was originally made in the act entitled "An act to increase the water supply of the city of Washington, and for other purposes," approved July 15, 1882, and simply provided for the erection of suitable fish-ways at the Great Falls of the Potomac and at the dam to be constructed under the provisions of this act, in accordance with plans and specifications to be prescribed by the United States Commissioner of Fish and Fisheries. This act specifically authorizes and directs the Secretary of War to do certain work pertaining to the increased water supply, but is silent as to any duty or responsibility on his part in relation to the fish-ways. It would, therefore, seem desirable that, if further appropriations be made for these structures at the falls, Congress should more definitely assign the duty and responsibility of its disbursement.

The original appropriation was \$50,000, of which there had been expended to June 30, 1887, \$44,365.18, leaving \$5,634.82 as the balance then available.

Amount available July 1, 1886.....	\$9,376.31
Amount expended during the year	3,741.49

Balance available June 30, 1887.....	5,634.82
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On June 11, 1886, in response to a resolution of the House of Representatives calling for information relative to the erection of fish-ways at the Great Falls of the Potomac, the acting Secretary of War, General S. V. Benét, transmitted the following correspondence:

[House Executive Document No. 272, Forty-ninth Congress, first session.]

FISH-WAYS, GREAT FALLS.

Letter from the Acting Secretary of War, transmitting letter from the Acting Chief of Engineers, inclosing report from Major Lydecker, in response to a resolution of the House calling for information relative to the erection of fish-ways at the Great Falls of the Potomac.

WAR DEPARTMENT,
Washington City, June 11, 1886.

The Acting Secretary of War has the honor to transmit to the House of Representatives a letter of the 8th instant from the Acting Chief of Engineers, and the accompanying copy of a report of the 2d instant from Maj. G. J. Lydecker, Corps of Engineers, the same being transmitted in response to House resolution of the 22d ultimo, calling for information as to what progress, if any, has been made in the erection of fish-ways directed to be placed at the Great Falls of the Potomac, under the act approved July 15, 1882, to increase the water supply of the city of Washington, and the act amendatory of said act, approved February 26, 1885; also as to

what amount of the sum appropriated for said fish-ways has been expended, and how much is reported available for their erection, and whether the sum heretofore appropriated is sufficient for such erection.

S. V. BENÉT,

Brigadier-General, Chief of Ordnance and Acting Secretary of War.

THE SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS, U. S. ARMY,
Washington, D. C., June 8, 1886.

SIR: I have the honor to return herewith the resolution of the United States House of Representatives of May 22, 1886, which was referred to this office, directing the Secretary of War "to inform the House what progress, if any, has been made in the erection of the fish-ways directed to be placed at the Great Falls of the Potomac, under the act approved July 15, 1882, entitled 'An act to increase the water supply of the city of Washington, and for other purposes,' and the act amendatory of said act approved February 26, 1885," etc., and to invite attention to the accompanying copy of the report thereon from Maj. G. J. Lydecker, Corps of Engineers, to whom it was referred, which, it is hoped, will afford the desired information.

It appears that the construction of the fish-ways was progressing until the end of October, 1885, when the works were submerged by a sudden and high rise of the river, which put an end to the operations at the Great Falls, doing great damage to the fish-ways. The fish-ways are still submerged, and it is impossible to state precisely the condition of the submerged sections. Major Lydecker is of opinion that they are practically destroyed. The balance remaining of the appropriation (\$9,376.31) is totally inadequate, and Major Lydecker states that he is unable to give any intelligent estimate of the amount required for their construction, since he has no knowledge as to what modifications, if any, in the original plan may be contemplated by the Fish Commissioner.

Very respectfully, your obedient servant,

JOHN G. PARKE,
Acting Chief of Engineers.

Hon. WM. C. ENDICOTT,
Secretary of War.

OFFICE OF THE WASHINGTON AQUEDUCT,
Washington, D. C., June 2, 1886.

GENERAL: I have the honor to return herewith the resolution concerning the erection of fish-ways at the Great Falls of the Potomac River which was agreed to in the House of Representatives on the 22d ultimo, and subsequently referred to me for report.

The resolution is as follows:

"Resolved, That the Secretary of War be directed to inform the House what progress, if any, has been made in the erection of the fish-ways directed to be placed at the Great Falls of the Potomac, under the act approved July 15, 1882, entitled, 'An act to increase the water supply of the city of Washington, and for other purposes,' and the act amendatory of said act approved February 26, 1885; also what amount of the sum appropriated for said fish-ways has been expended, and how much is reported available for their erection, and whether the sum heretofore appropriated is sufficient for such erection."

The act approved July 15, 1882, to which reference is made in the foregoing resolution, provided and appropriated in relation to the fish-ways as follows:

"To provide for the erection of suitable fish-ways at the Great Falls of the Potomac and at the dam to be constructed under the provisions of this act in accordance with plans and specifications to be prescribed by the United States Commissioner of Fish and Fisheries, \$50,000, or as much thereof as may be necessary."

After the passage of the above act the work of preparing plans and specifications, including the necessary preliminary surveys, was duly commenced under the directions of the Commissioner of Fisheries, and continued until June 7, 1884, when the detailed plans and specifications were forwarded to this office. On their receipt it appeared that the plans involved the adoption of the McDonald system of fish-ways, which is protected by letters patent, and that a claim for royalty on account of its use was likely to be submitted; in fact, on the 18th of July, 1884, the secretary of the McDonald Fish-way Company filed a claim for \$12,000 royalty, and the matter having been submitted to the Secretary of War, I was instructed to suspend all opera-

tions looking to the erection of fish-ways until this claim was disposed of, or until further orders.

Accordingly nothing more was done until the spring of 1885, when, on the 18th of March, the McDonald Fish-way Company executed a full and free license to the Government to use all its patents in connection with the erection of these fish-ways, and steps were at once taken to place the work under contract. Advertisements for proposals were published April 15, 1885, bids opened May 8, and contract awarded to John E. Lyons, of Baltimore, Md. Operations under this contract were fairly under way by the end of the next month (June, 1885), and were continued with commendable vigor by the contractor until the end of October, 1885, when the works were submerged by a sudden and high rise of the river, which put an end to operations, doing great damage to the fish-ways, substantially as described in the following extract from a report made to me, under date of November 5, 1885, by my assistant, Capt. T. W. Symons, Corps of Engineers, under whose immediate directions operations on the fish-ways had been prosecuted:

"I have the honor to report that yesterday I made an examination into the condition of the fish-ways as far as the high water would permit. Sections 2, 3, and 4, which were in process of construction, are still covered with water, and it is impossible to determine at present the extent of damage done to them by the high water. It will not be practicable to examine these sections until the water goes down very much or the deflecting dams are rebuilt. Section 5 was nearly complete. The side walls were completed with the exception of a very few stones, the coping, and the through-bolts; all else was completed, the iron and timber work being in place and thoroughly bolted together and to the bottom and side walls. It has been almost completely destroyed. The side and head walls have been torn away and the mass of timber and iron lifted bodily, turned completely over, and deposited bottom upward on the rocks about a hundred yards farther down the river, near section 6. An examination of this wreck indicates that before it gave way and was uprooted it suffered greatly from the action of the water and the water-borne bodies coming in contact with it. The floor was badly cut and broken, the grating bent, and the ends pulled out and broken off, and the upper ends of the cell partitions bruised and battered into a broom-like condition. It is my opinion that had number 5 remained in place, it would have been so badly damaged that its efficiency as a fish-way would have been materially interfered with.

"Section 6 escaped with comparatively little injury so far as can be now ascertained. This section is protected by the backing up of the water from the main channel of the river, and thus deadening the currents down the Maryland channel, and by the deflection from it of the main currents of the Maryland channel, which in high water runs to the east of it.

"The wreck of number 5 lies considerably to the east of the line joining the location of 5 and 6.

"The temporary deflecting dam above section No. 2, which deflects the water coming over the aqueduct dam from the Maryland channel, has been very badly injured, large sections being carried away. This deflecting dam is necessary to allow work to be carried on in any of the sections below the first. It is now so late in the season that it is doubtful if this dam could be repaired and any work done on the lower sections this season. This must then be considered as the close of the season's operations on the fish-ways. The contractor has really done about three-fourths of the entire work of constructing the fish-ways. The high water resulting from the storms of October 29 and 30 has carried away a large part of this work, including the whole of section 5. The remaining portions must be left in an unfinished condition during the coming winter and spring, subject to the floods and floating ice incidental thereto. It is highly probable that what has been done will be in a very large measure destroyed before another season's work can commence, and the work of building the fish-ways will practically have to commence again."

Since the date of this report the fish-ways have remained under water, and it is still impossible, as it was then, to state precisely the conditions of the submerged sections. I would state, however, that in my judgment they are practically destroyed.

In the mean time all attempts to complete the work under the contract with Lyons has, with the approval of the honorable Secretary of War, been abandoned, and settlement made with him for work done and material actually delivered. This action was taken in pursuance of my recommendation, based on the conviction that the fish-ways as planned were totally inadequate in strength for the locality, and that it would simply be a waste of money to attempt to complete them as contracted for. At the time operations were suspended the contractor had completed about three-fourths of the work involved in his contract.

The amount expended from the sum appropriated for the fish-ways up to March 10, 1886, the date of final settlement with the contractor, is \$40,623.69, and the balance now available for their erection is \$9,376.31; this balance is totally inadequate, nor can I give any intelligent estimate of the amount required for that purpose, because

I have no knowledge as to what modifications, if any, in the original plan and location of the work, may be contemplated by the United States Commissioner of Fisheries with a view to insuring its stability.

Very respectfully, your obedient servant,

G. J. LYDECKER,
Major of Engineers.

Brig. Gen. JOHN NEWTON,
Chief of Engineers, U. S. A.

On November 23, 1886, Prof. S. F. Baird, the Commissioner of Fisheries, requested Major Lydecker, U. S. Engineers, to "direct such additional surveys to be made as are necessary to furnish the basis for the estimates of the additional appropriation needed to complete the fish-ways."

On December 16, 1886, Major Lydecker replied to the Commissioner, that "after consultation with Colonel McDonald in relation to the completion of the fish ways at the Great Falls, and full consideration of the structural conditions required to insure their stability, I am of the opinion that an additional appropriation of not less than \$25,000 will be needed to secure the object in view."

WASHINGTON, D. C., *November 23, 1886.*

DEAR SIR: In view of the importance of maturing the estimates for the completion of the fish-ways at the Great Falls at as early a date as practicable, I respectfully request that you will direct such additional surveys to be made as are necessary to furnish the basis for the estimates of the additional appropriation needed to complete the fish-ways.

Colonel McDonald is instructed to be ready at any time to give such assistance, should you desire it, as may be called for in determining location of No. V, and in preparing plans for section to be placed in permanent deflecting dam, should such location be determined on.

I have also instructed him to prepare working model of proposed modified design for No. V and submit the same, when completed, to your inspection and criticism.

A copy of report from Mr. McDonald is herewith transmitted.

Very truly yours,

S. F. BAIRD,
Commissioner.

Maj. G. J. LYDECKER,
U. S. Engineers.

WASHINGTON, D. C., *November 23, 1886.*

DEAR SIR: By appointment of Major Lydecker, U. S. Engineers, I accompanied him to the Great Falls, and with him and the engineer immediately in charge of the fish-way constructions, made careful examination of the condition of the incompletd sections, with the view of determining such modifications of plans or location as might be deemed necessary to afford thorough protection from high water and drifting timber and ice. The questions presented for solution are questions of construction under extraordinary difficulties, and I would prefer to mature the plans for the completion of the work under the immediate advice and suggestion of Major Lydecker. I respectfully ask, therefore, with the view of avoiding delay in the matter, that you request Major Lydecker to make at once such recommendations in regard both to the construction and location of the remaining sections and the auxiliary protective works as in his judgment may assure the permanence of the completed works.

It is desirable that such additional surveys as may be necessary in order to obtain estimates for the completion of the work should be made at once, and the estimates ready to be placed before the Committee on Appropriations at an early period of the session.

In the case of No. 5 a change of site will doubtless be necessary, the present site being left as an overflow channel for flood water. For this section a modified plan, simpler in construction and of much greater strength and solidity, has been designed in wrought iron. This, it is believed, will be equally efficient in operation as the present design, but some experimental investigations are now in progress to settle this question definitely. The new design can be erected at a cost in no event

greater than the one now adopted, and estimates based on the present design will cover the cost of the proposed modified or alternate plans.

Nos. 2 and 4, as reported to you in a previous communication, were not materially injured, and the damage received can be repaired at trifling cost. It will probably be found desirable to complete them without modification of plan.

A serious defect in them arising from the liability of the water conduits to become obstructed by stone and gravel can be obviated by a very simple and ingenious device proposed by Major Lydecker. This consists in arranging access of water to the conduits in such way that stone and gravel are effectually trapped between the bulkheads under the open grating, whence they can be easily removed.

No. 3 is a short section, and can be completed on either original or modified plan. No. 1 can be provided for in connection with the construction of the proposed permanent dam to keep out flood water.

Very respectfully, your obedient servant,

M. McDONALD,
Chief Division of Distribution.

Prof. S. F. BAIRD,
U. S. Commissioner of Fisheries, Washington, D. C.

OFFICE OF THE WASHINGTON AQUEDUCT,
Washington, D. C., December, 15, 1886.

SIR: After consultation with Colonel McDonald in relation to the completion of the fish-ways at the Great Falls, and full consideration of the structural conditions required to insure their stability, I am of the opinion that an additional appropriation of not less than \$25,000 will be needed in order to accomplish the object in view.

I would state that a precise estimate, based simply on the number of yards of masonry, feet of timber, pounds of iron, etc., and predicated on the lowest prices bid at the last letting of the work, might indicate that \$20,000 would suffice; but this would leave no margin for the uncertain condition of weather and flood by which the actual cost of construction in this exposed locality must be affected, as so clearly shown by past experience.

Very respectfully, your obedient servant,

G. J. LYDECKER,
Major of Engineers, U. S. A.

Prof. S. F. BAIRD,
U. S. Commissioner of Fisheries, Washington, D. C.

Estimates to cover the additional amount recommended as necessary for the completion of the fish-ways were duly transmitted by the Commissioner to the Committee on Appropriations of the House of Representatives, and the matter here rested until February 1, 1888.

The deficiency bill passed on this date provided, among other items, for the completion of the erection of suitable fish-ways at the Great Falls of the Potomac, authorized by the act entitled "An act to increase the water supply of the city of Washington, and for other purposes," approved July 15, 1882, \$25,000.

On April 23, 1888, the present Commissioner of Fisheries addressed a communication to the Hon. W. C. Endicott, Secretary of War, stating that it was desirable to make certain changes of location, and certain modifications in some of the details of construction, with the view of giving greater solidity as well as better efficiency to the constructions, and requested him to authorize the expenditures for the necessary surveys, and for the preparation of the plans and specifications.

Replying under date of May 17, 1888, the honorable Secretary of War authorized the work proposed, and directed that the expenses should be paid out of the balance remaining of the original appropriations of \$50,000 made in 1882, as follows:

WAR DEPARTMENT,
Washington City, May 17, 1888.

SIR: I have the honor to acknowledge the receipt of your letter of the 23d ultimo, on the subject of modifying the present plans for the construction of the fish-ways at the Great Falls of the Potomac, and suggesting that the expenses should be provided for out of the appropriation for fish-way construction.

In reply I beg to state that the expenses of the necessary surveys at the Great Falls will be paid by Maj. G. J. Lydecker, Corps of Engineers, from the balance of the appropriation for "fish-ways," but it is suggested that the plans and specifications for the work of construction now proposed should be furnished by the Commissioner of Fish and Fisheries as provided in the act of July 15, 1882.

Very respectfully,

WM. C. ENDICOTT,
Secretary of War.

M. McDONALD, Esq.,
Commissioner, U. S. Commission of Fish and Fisheries, Washington, D. C.

The additional surveys authorized were completed under my direction by Mr. Frank Blaisdell, and the preparation of the plans and specifications was undertaken in the engineer office of the Fish Commission under my personal supervision and direction until some time in July, when my official duties called me to the New England coast. The plans were completed and transmitted to me at Wood's Holl, Mass., on August 7, 1888. When received the season was too far advanced to permit arrangements to be made for the completion of the work that season, had the plans been in such detail as to permit the preparation of the minute specifications which would be required, should the Secretary of War decide (as he did decide) that the work should be done by contract.

No further action was taken until my return to Washington, when I transmitted the plans to the Secretary of War with the following communication:

U. S. COMMISSION OF FISH AND FISHERIES,
Washington, D. C., November 13, 1888.

SIR: I have the honor to report that the surveys necessary to furnish the data for the preparation of the plans and specifications for the completion of the Great Falls fish-ways, and which were authorized by your letter of May 17, 1888, have been finished; and the maps, plans, and general specifications of the work proposed are herewith respectfully transmitted.

The work, as originally planned, contemplated six separate fish-ways or fish-way sections, surmounting a total vertical ascent of 71 feet. When work was suspended several years ago in consequence of damages resulting from high water, none of these sections were completed. On the upper section (No. I) no work had been done. The lower section (No. VI) was substantially completed and in working order, but lacked the stone coping required for the protection and preservation of the superstructure. The intermediate sections were in various stages of construction, No. V being nearest completion.

All the sections under construction were more or less damaged by the flood, the damage being greatest to No. V, the entire superstructure of which was torn from its foundations and floated down-stream. No. VI was not materially damaged, and was subsequently completed by Maj. G. J. Lydecker, U. S. Engineer, under instructions from the War Department, and is now in efficient working order.

In submitting plans for the completion of the work, I have found it desirable to change the location of Nos. IV and V to positions less exposed to the violence of the floods, and to introduce in all the sections modifications of design which give greater simplicity to the constructions, assure greater strength and permanence, and reduce very greatly the cost per running foot. Better efficiency is also attained, and the clogging or choking of the fish-way by floating timber, or by sand and gravel, is effectually prevented.

The new locations of Sections IV and V are shown in sheet 1.

Details of the modified designs as applied to Sections IV and V are shown in sheet 2.

Sections No. II and No. III suffered little damage from the flood. The superstructures of these were not in place at the time, and the foundations and side walls are in good condition and can be completed at little cost. Details of the new design adapted to these sites are shown in sheets 3 and 4. Details of the same design adapted to the waste-way in the center of the sixth section are shown in sheet 1, figures 1 and 2.

RESUME OF WORK TO BE DONE.

Sections IV and V.—It is proposed to change the locations of sections Nos. IV and V, and adopt the new locations shown on map of recent survey made under authority of the War Department (See sheet 1.) These sections will be built according to plans shown on sheets 1 and 2. A deflecting dam will be built from the head of section IV

across the present channel, so as to divert a sufficient volume of water to fill the fish-way sections.

Section VI—The central trough of Section VI will leave a fish-way 5 feet wide constructed in same, to be made as shown in figures 1 and 2, sheet 1. It is also proposed to repair damage to floating and grating of Section VI, and remove the rock from the sides and entrance to same.

Sections II and III will be reconstructed on their present sites, according to plans shown in sheets 3 and 4.

Section I.—In the construction of Section I it is proposed to build the same along the base of the dam, adapting it to the irregularities of the ground, and crossing the dam by an opening 10 feet wide and 2 feet deep about 150 feet from the shoulder of the dam, near the intake of the water for aqueduct. The dam at this point is solidly buttressed on its lower side by ledges of rock, and may be cut through without any danger of weakening it.

Auxiliary constructions will be as follows:

(1) The completion of temporary dam to keep out water during progress of construction.

(2) The construction of a riprap-deflecting dam to turn the water which now passes down the water channel back into the channel at the head of No. 6, it being of the utmost importance to deliver the largest practicable volume of water into the river through and alongside of No. 6 in order to invite the entrance of fish.

A permanent dam near the site of the present temporary dam, though not essential to the permanence of the fish-ways as now designed, is desirable in order to control the volume of water passing down the fish-way sections and to cut off the water at pleasure when it is desirable to do so.

It is evident from the above resume of work to be done, that it can not well be executed by contract. Latitude must be allowed in construction which can not well be provided for in plans and specifications. The work should, in my judgment, be executed under intelligent and expert supervision and by day labor. The material for the superstructure—the iron deflecting plates, the bolts, and the timbers required—could be provided by contract; but the work of construction could be better done, and I think more cheaply done, by carrying it on as I have above indicated.

In view of the provision incorporated in the last river and harbor bill, it seems probable that fish-way constructions will be an important matter in connection with river and harbor improvements. It would appear desirable, therefore, that the present work should furnish the opportunity for study and experience that may find useful application elsewhere.

I would therefore respectfully recommend that the responsible direction of this work be placed under the Commissioner of Fish and Fisheries, and that either an officer of engineers be assigned to the immediate charge of the same, or the Commissioner of Fish and Fisheries be authorized to employ a competent civil engineer to superintend the construction.

Very respectfully,

M. McDONALD,
U. S. Commissioner of Fish and Fisheries.

Hon. W. C. ENDICOTT,
Secretary of War.

The matter remained in abeyance during the winter, and on April 13, 1889, the Secretary of War, referring to my communication of November 4, 1888, replied as follows:

WAR DEPARTMENT,
Washington City, April 13, 1889.

SIR: I have the honor to acknowledge the receipt of your letter of November last, submitting plans for the proposed completion of the Great Falls fish-ways.

The plans have received the approval of the Chief of Engineers, and there seems to be no objection thereto with the exception of the cut proposed in section 1 of this work. On this subject Col. John M. Wilson, Corps of Engineers, states that, in his opinion, the cut must necessarily weaken the dam unless the work is done in the most careful manner, and the bottom and sides of the cut substantially protected. The Chief of Engineers, in reporting on the subject, remarks that "in view of the increased service the dam will be called on to supply upon the completion of the 42-inch main recently authorized by Congress, and of the possible injury to the dam, a cut through its crest should not be authorized in the position suggested, which is not far distant from the effluent gate house, and it is recommended that the Commissioner of Fish and Fisheries be requested to modify the plans so as to avoid the location suggested, and to place it nearer to 'Conn's Island.'"

The Department, concurring in the views of these officers, I beg to request that

modified plans be submitted for the proposed cut in section 1, so as to conform to the suggestion of the Chief of Engineers, and to ask that a tracing of this section be furnished, as one does not appear to be with the papers in the case.

Very respectfully,

REDFIELD PROCTOR,
Secretary of War.

Prof. MARSHALL McDONALD,
Commissioner of Fish and Fisheries, Washington, D. C.

Subsequent correspondence relating to certain modifications of plans to avoid weakening the water-supply dam and to the execution of the work is as follows:

WAR DEPARTMENT,
Washington City, May 2, 1889.

SIR: Acknowledging the receipt of your letter of the 18th ultimo, in connection with previous correspondence on the subject of the Great Falls fish-ways, I have the honor, pursuant to your request, to submit a plan of the dam deemed necessary in the construction of the new fish-way, and to ask that you cause to be prepared drawings and specifications for a fish-way so designed as to avoid cutting the dam.

It is proper to add that the Chief of Engineers, in submitting this matter, recommends that the work be done by contract under the supervision of an inspector to be nominated by you; Colonel Wilson, Corps of Engineers, to be held responsible for the proper disbursement of the funds only, and that this meets with the approval of the Department.

Respectfully,

REDFIELD PROCTOR,
Secretary of War.

HON. MARSHALL McDONALD,
Commissioner of Fish and Fisheries, Washington, D. C.

WASHINGTON, D. C., May 14, 1889.

SIR: I have the honor to acknowledge the receipt of your communication of May 2, transmitting plan and section of the water-supply dam at the Great Falls of the Potomac, and requesting that I "cause to be prepared drawings and specifications for a fish-way so designed as to avoid cutting the dam."

The fish-way proper, wherever located, will be built below the dam, and its erection will not involve any cutting or other interference with the dam, as by means of it the fish ascending will be brought to the level of the crest of the dam. The amount of water necessary to keep the fish-way full and in efficient working condition, will be afforded by the overflow from the dam; and when there is not less than 8 inches of water passing the crest fish will have no difficulty in passing from the pool at the head of the fish-way into the level above the dam. In lower stages of the river, to facilitate their passage over the crest, it is desirable to provide suitable depth for swimming-way, either by a depression in the crest-line, or by a culvert under the coping, the crest-line and coping remaining intact. The depression in the first case may be of moderate dimensions, its object being solely to furnish a sufficient depth of swimming-way, the amount of water passing above the established crest-line being sufficient at the lowest stages of the river to keep the fish-way full.

In the second case, the intake of water being by the culvert under the coping, this should be of sufficient dimensions to furnish all the water necessary for the working of the fish-way. The quantity, however, required for the purpose is insignificant, and would not affect appreciably the level of the water in the dam.

I have the honor to submit two provisional plans for crossing the dam, fulfilling, as far as practicable, the conditions imposed, the same being adapted to the location marked A A on the plan of dam furnished by the Chief of Engineers. Plan I is the more desirable construction, having consideration wholly with reference to fish-cultural requisites. Plan II will provide as efficient a construction, but the pool is liable to be filled by drift, and will require periodical cleaning. Should it be decided that neither the culvert through the dam, nor the depression in the coping can be allowed, I should still use Plan II, increasing the dimensions of the pool along the face of the dam, so that the overflow into it would be sufficient to keep the fish-way in operation at the lowest stages of water. Under the ordinary full stops of river prevailing to the 1st of July, it is probable that fish could usually pass the crest-line without difficulty.

As the migration of the shad up-stream is continued up to August, and the movement of the rock fish or striped bass is during the season of low water, it is desirable, for the best results, that they should be able to pass the dam at all stages, and this can not be accomplished except by the adoption of one of the plans submitted.

Very respectfully,

M. McDONALD,
Commissioner.

HON. REDFIELD PROCTOR,
Secretary of War.

WAR DEPARTMENT,
Washington City, May 31, 1889.

SIR: Referring to previous correspondence on the subject of the Great Falls fish-ways, I have the honor to acknowledge the receipt of your letter of the 14th instant, submitting two plans for a fish-way so designed as to avoid cutting the dam at that point.

In reply, I beg leave to state that I have approved the recommendation of the Chief of Engineers that plan No. 1 be adopted after modification providing for grooves 6" x 8" in the checks of the cut for the insertion of stop plank for use, should experience prove it necessary to prevent an undue lowering of the headwater at the intake of the aqueduct. Approval has also been given to the recommendation of the Chief of Engineers of April 29, 1889, previously communicated to you, that the work be done by contract under the supervision of an inspector nominated by you, and that Colonel Wilson be held responsible for the disbursement of the funds only.

Very respectfully,

J. M. SCHOFIELD,
Major-General, Acting Secretary of War.

HON. MARSHALL McDONALD,
Commissioner of Fish and Fisheries.

In pursuance of instructions from the Chief of Engineers, Col. J. M. Wilson, U. S. Engineers, then in charge of the work for the increase of the water supply, addressed me, under date of June 4, 1889, as follows:

OFFICE OF THE WASHINGTON AQUEDUCT,
Washington, D. C., June 4, 1889.

SIR: I have the honor to inform you that I have this day received from the Chief of Engineers your letter of the 14th ultimo to the Secretary of War, with various indorsements thereon, together with copies of the letter of the 31st ultimo to you from the Acting Secretary of War.

The Chief of Engineers has directed me as follows:

"Colonel Wilson will place himself in communication with the Commissioner of Fish and Fisheries, with a view to having detailed plans and specifications prepared, contracts drawn, and an inspector nominated. After approval by this office, the work will be carried out under the direction of said inspector, Colonel Wilson confining his supervision to seeing that the dam is not injured and that the disbursement of the money is properly made."

In view of the foregoing order I have the honor to request that you will please cause to be prepared and sent to me at your convenience, plans and specifications in detail of the proposed fish-ways and that you will nominate as inspector such person as you may deem fit to inspect this important work.

It has been the custom of this office to pay ordinary inspectors about \$100 per month, but in view of the character of your work which will probably require the services of an expert, I think his salary should be higher, probably from \$120 to \$140 or \$150 per month, depending upon his skill and capacity.

The plans and specifications should be complete, the latter entering into the minutest detail, as they become a part of the contract, and any omission, however trifling, may lead to complications with contractors.

As soon as these plans and specifications reach me, I will prepare advertisements inviting proposals and after the work is awarded will, subject to the approval of the Chief of Engineers, enter into contract for the work.

As soon as the contractor is ready to begin, I will notify you, and your inspector can then be appointed and assigned to duty.

In all payments upon vouchers, I shall request your certificates as to quantity of materials received, time employed, etc., and, based upon them, will make payments as required by the order of the Secretary of War.

If agreeable to you, I will be glad to see you at this office any day between 11 a. m. and 12.30 p. m., to consult in reference to this matter; or, if you prefer it, I will take pleasure in coming to your office any day you may mention after 4 p. m.

I am, sir, very respectfully, your obedient servant,

JOHN M. WILSON,
Colonel, U. S. Army.

HON. MARSHALL McDONALD,
Commissioner of Fish and Fisheries, Washington, D. C.

After conference with Colonel Wilson and acting in accordance with his suggestions, Mr. C. E. Gorham, the engineer officer of the Commission, was assigned the work of preparing the necessary plans and specifications. These were completed in July, but too late in the season to permit undertaking the work of construction until the following season, 1890.

During the winter of 1889-'90, the plans and specifications were carefully studied and revised, and have been ready for transmissal to the Chief of Engineers since April, 1890.

In submitting the plans, however, the duty of nominating a competent engineer officer as inspector is devolved upon the Commissioner of Fisheries, and he has not yet been able to find one available to whom he feels justified in committing the responsible direction of the work of construction. I consider it necessary in the Government interest to proceed with the utmost caution and consideration. It is far more important that the work should be well done than that it should be quickly done.

It is after all an experiment; we are not absolutely sure that effective means can be devised for passing shad over such obstructions as are offered by the Great Falls. We, however, feel very sure that it can be accomplished, and it is important that we should settle here the conditions as well as the probabilities of success or failure.

All expenditures on account of the fish-ways have been made under the authority of the Secretary of War. All disbursements have been made by the Officer of Engineers, in charge of the extension of the water-works.

The deficiency appropriation of twenty-five thousand dollars is intact, and there is also the balance remaining unexpended of the original appropriation. All is available for the completion of the work in accordance with the plans and specifications now ready for transmission.

At 3 o'clock and 40 minutes, p. m., the sub-committee adjourned to meet at the call of the chairman.

WASHINGTON, D. C., *September 15, 1890.*

The subcommittee met at 2 o'clock p. m. pursuant to call of the chairman.

Present: Senator Stockbridge (chairman).

TESTIMONY OF G. BROWN GOODE.

G. BROWN GOODE, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What is your full name?—A. G. Brown Goode.

Q. Where is your residence?—A. Washington.

Q. Are you employed in the Government service?—A. Yes; in connection with the National Museum.

Q. Please state in what branch of the service and what capacity?—A. I am assistant secretary of the Smithsonian Institution, in charge of the National Museum.

Q. Were you ever connected with the U. S. Fish Commission?—A. I have never been a salaried employé of the Fish Commission, but from 1872 to the time of Professor Baird's death I was in such intimate, personal, and official relations with him that I was constantly familiar with the work and did much volunteer work for it, and was in a certain way officially connected with it on two or three occasions. Shall I state them?

The CHAIRMAN. You may do so.

The WITNESS. In 1876 I was in charge of the exhibit of the Fish Commission at the Centennial. In 1877 I was employed as statistical expert in connection with the Halifax Fishery Commission, in the employ of the State Department. In 1879 I was appointed special agent in charge of the fisheries investigation of the Tenth Census, which was under the joint direction of the Census and the Fish Commission. In 1880 I was commissioner in charge of the display of the United States at the International Fishery Exhibition at Berlin, and in 1883 I was commissioner in charge of the exhibit at the International Fisheries Exhibition in London.

In the meantime I was constantly as a volunteer in charge of the report on the statistics of the fisheries; in fact, I think I had some honorary connection with the Commission, such as chief of the division of fisheries. In 1887, immediately after the death of Professor Baird, at the request of the President I assumed the Commissionership, which I held until the law was modified and the present Commissioner was appointed—about six months.

Q. You are undoubtedly aware that certain charges have been made affecting both the general administration of the Commission and the character of work now being carried on by it. Can you tell us anything about the internal affairs of the Commission since the appointment of Mr. McDonald as Commissioner, or have you had no opportunities to judge of that matter?—A. I have had the same opportunity that any person outside of the Commission and deeply interested in the work would have; and I have no hesitation in saying that I think the administration has been all that could be expected, and more than was expected. The Commission is efficiently organized, and is doing admirable work in every direction.

Q. In the scientific and practical branches?—A. Yes, sir; in both points of view.

Q. From your long acquaintance with the affairs of the Fish Commission and your acquaintance with the present Commissioner and his methods of business, state whether you would approve his methods?—A. In the first place, in regard to the personal attainments of the Commissioner. McDonald began his life almost as a pupil of Professor Baird, and as long ago as 1858 or 1859, when he was a mere boy, he was at the Smithsonian for one or two winters, and imbibed the principles of Professor Baird's work, and was always one of his most devoted disciples. I have known him ever since 1874. At the time he first became commissioner of fisheries for the State of Virginia, he showed so much enterprise, so much ingenuity and capacity in that work that as soon as the Commission had sufficient appropriations Professor Baird felt obliged to call him to his aid to take charge of the practical fishery work. There was no one else who could do it as well. I think he had not completed his scientific education, but he was enough of a scientific man to hold a scientific professorship at the Virginia Military Institute for a number of years, and only resigned that to come to the Commission. He is a man of great mechanical ingenuity. I think no one can deny that the most important inventions in modern fish-culture, in regard to fishways and matters of that kind, have been his. I had an opportunity to see that at the Fisheries Exhibition in London, where he received high awards, and where his apparatus was considered of the very best; and it was the apparatus devised and made practically by him that gave the United States its pre-eminence there in the matter of fish-culture.

Q. Has Colonel McDonald ever received any pay from the Government for the use of these various inventions?—A. I am not posted on that point. My impression is that he has not. I do not see how he could have received pay. He has, I think, received some royalties from the Scotch Government for the use of his fishway. I would not be positive of that. His work in fish-culture has been constantly in the direction of greater practicability and of greater economy in the handling of eggs, so that with the same force very much better results could be accomplished.

At the time of Professor Baird's death, Colonel McDonald was chief of the division of distribution, and had charge of almost all the work of the Fish Commission, with the exception of one or two stations, which were under the control of the Assistant Commissioner. I saw a good deal of his practical work during the six months I was Commissioner. I went with him on his car to one or two places, and was impressed with the fact that he was a very careful business administrator, and a very shrewd man. His whole thought, his whole life, was given to this thing. He thought of nothing else. He would not talk of anything else.

As regards his scientific attainments, he is not an investigator. His tendencies have been in the direction of mechanical and inventive science, but he is a man who has a broad conception of the needs of the work, and has also what is very important in such a position, the feeling that in such work science should be made tributary to practical work. He realizes that science must be cultivated for its own sake, because many things which are done without a practical result in mind lead to a practical result. But I think the key-note of his administration has been that every move should produce some definite practical result.

Q. Did you not, while acting as Fish Commissioner, in the fall of 1887, adopt certain regulations embodying an organization which thereby became established?—A. I did. I may state, Mr. Chairman, that the organization was based upon a report which had been prepared before Professor Baird's death, and submitted to him by a committee of his own appointment, a committee of three of the best men in the Commission. I know of my own personal knowledge that it had Professor Baird's approval, and if he had lived longer he would undoubtedly have put it into use.

Q. Here is a pamphlet which is said to contain those regulations and to define that organization. Do you recognize them as the ones established by yourself?—A. Yes, sir. It has my signature to it.

Q. We suppose that you considered that there was sufficient reason for providing such an organization. Did any definite organization exist during the lifetime of Professor Baird?—A. Practically no organization. Professor Baird held every line in his own hands. No one else could have done that. And if Professor Baird had not worked so hard his friends think he would have lived longer.

Q. Therefore before his death he had this plan of organization in view?—A. He had it deeply on his mind, and was constantly talking about it. He was so employed in the midst of other matters that he was unable to break the chain of the existing organizations, but he was leading to it.

Q. What was your purpose in making this organization? Did you expect thereby to promote the efficiency of the work or to provide for its better conduct through the agency of responsible chiefs?—A. That was my intention, and my intention also was to put the work of the Commission in such a way that it would be thoroughly intelligible to people outside; to put the thing—that was the request that President Cleveland made to me when I took the place—to put the thing on a thoroughly practical, business basis, in such manner that Congress and he could understand it.

Q. We notice that the organization provides for four divisions of the service. The first, entitled "administration," appears to be essentially the Commissioner's office. The others are scientific inquiry, statistics of the fisheries, and fish-culture. Do you consider that those divisions represent a natural subdivision of the branches of work with which the Commission is charged?—A. I do.

Q. Had that system been in operation long enough before you resigned the commissionership for you to judge of its merits then?—A. No. I should be sorry to say that it had. I think I should want at least a year to observe it before I would have been thoroughly satisfied with it.

Q. We understand that the same organization has been continued under Mr. McDonald. Do you consider that he was justified in so continuing it?—A. I think he was.

Q. Do you know anything about the working of the system under his administration, whether it has worked smoothly?—A. I think it has.

Q. Do you consider that, in its main features at least, the present system of organization meets all the actual requirements of the Fish Commission service?—A. I can not now see how it could be improved.

Q. Have you kept yourself informed respecting the work that has been carried on by the division of scientific inquiry of the Commission during the past two years?—A. Only in a general way, of course. There has been very little, comparatively, published, although I know that a great deal has been prepared for the printer. So far as it is possible in advance of the publication of the results to judge, I am of

the impression that the work is of great importance. In fact, I know that many of the men who have been intrusted with special subjects are the very best in the country, in the world, for them. I have no doubt the results will be of the greatest importance.

Q. A paper has been presented to the committee which is said to explain briefly the functions of that division as they have been interpreted by Commissioner McDonald. Here is a copy of it. Will you please give us your opinion of it in as brief a manner as possible? The principal question is, Does the plan he proposes seem to meet the requirements of the Fish Commission work? Does it provide for the economic results for which the Commission has been established, and is it sufficiently comprehensive in its scope? Furthermore, does it seem to you practicable to carry on the work as there proposed? When Professor Rathbun was before the committee he was asked to explain fully the scope of the work under his direction. Are you acquainted with Mr. Rathbun?—A. Very well.

Q. Do you consider him competent for the position he occupies?—A. Undoubtedly. I have always grudged him the Commission; we can not spare him to the Commission.

Q. You know his general plan of work; do you think it is as good as any that could be adopted?—A. I think he is carrying out as nearly as can be in the absence of the professor, Professor Baird's ideas, and is extending them in the direction Professor Baird would have extended them if he had had full vigor and health.

Q. From your knowledge of the workings of the Commission under the present commissioner, do you think that it has been his plan and purpose to carry out in a general way the general plans of Professor Baird?—A. Undoubtedly.

Q. He was an appointee of Professor Baird's?—A. Yes, sir. He has superadded to that the idea of bringing into shape the results of a great many things which Professor Baird began and was not able to complete.

The Commission under Professor Baird was still in the formative state, and he was branching out into new things and many things in which important results had been attained, but had not the time to bring them together. McDonald is not only carrying out Professor Baird's ideas in the way of making new discoveries, but he is clinching the nails which Professor Baird drove, so that all his good work is being saved.

Q. It has been expressly charged in this connection that the scientific branch of the Fish Commission was being run by the present Commissioner solely or chiefly in the interest of the National Museum. That the steamers and field parties are employed to gather specimens simply to to enrich the collections of the National Museum and to provide for its exchanges with foreign institutions. Can you give us positive information in respect to that subject?—A. Mr. Chairman, that is almost too absurd to deserve any notice, but since you have asked the question, I will say that that is the only ground of dissatisfaction I have with the Commission. Often in three months under the old administration the Museum received more material from the Commission than it has under three years of McDonald's commissionership. In fact while the Fish Commission used to be in more intimate relations with the Museum than any other department of the Government, there are now two or three others, the Geological Survey, the Bureau Ethnology, and the Department of Agriculture, which are in closer relations to the Museum than the Fish Commission, and while there are the pleasantest relations

between the Museum and the Commission, I never could see why that policy of close co-operation, such as the Geological Survey and the Department of Agriculture find profitable, should have been abandoned by the Commission.

Q. Have you reason to suppose that any part of the work of the Commission is now being conducted for that purpose, or with that object in view; or does the field-work appear to go on without reference to the National Museum?—A. The field of work undoubtedly goes on without reference to the Museum, not that the present Commissioner would not willingly do all in his power to assist the Museum, but his mind seems to be so concentrated on the practical results that he does not feel justified, I think, in turning aside.

Q. Is it not true that they furnish you a good many duplicates of specimens?—A. They furnish us with the first set of specimens after they have been worked up. Previously the collections were all turned into the Museum and were distributed by the Museum in the name of the Commission. Now we get one set, and that is precisely what the Museum of Comparative Zoology in Cambridge gives us in all fields in which we are interested. In other words, the Commission is doing its own work, and it does for the Museum what is required by law, and but little more. I think the Commissioner would like to do more, and I hope he will see his way clear to do it after a while.

Q. Does not the Commissioner send to the National Museum the type series of specimens collected by the field parties, after they have been studied by specialists, as permanent records of the work?—A. Yes sir.

Q. Is this not in accordance with an act of Congress?—A. It is required by law, and has been for forty years.

Q. Do any of the Fish Commission employés hold positions in the National Museum?—A. There are three of the Fish Commission men who have always held honorary curatorships in the Museum. An honorary curatorship is a curatorship without pay. The services are voluntary, and the work which the honorary curator does in the Museum is supposed to be for the benefit for the department with which he is connected as well as for the Museum.

Q. Have those persons received any salaries or compensation?—A. None whatever.

Q. Has this matter of securing Museum curators from the Fish Commission been arranged recently or is it of long standing?—A. It is practically as old as the Commission. These men when they came in the Fish Commission service usually came in through the Museum, and proving good Museum officers gradually became volunteer officers of the Fish Commission, and were transferred, meanwhile retaining their old places in the Museum.

Q. Do the services of these curators in the National Museum appear to have interfered with their duties on the Fish Commission?—A. On the contrary, I think their efficiency has been increased by it. They have had opportunities in the way of materials to study and books and matters of that kind, which the Fish Commission is not in position at present to afford.

Q. Do any other departments of the Government supply curators to the National Museum in this same way?—A. Yes, sir. We have from the Geological Survey seven, one from the Bureau of Ethnology, three from the Department of Agriculture, one from the medical corps of the Navy, and sometimes quite a number of aids detailed from the Navy as well, and we have one retired Army officer, that is, as curator.

Q. Does Dr. T. H. Bean hold any position in the National Museum

besides that of curator of fishes?—A. Hardly a position. He is, however, chairman of the committee on publications, and has been since the organization of that committee.

Q. Does he receive any pay from the National Museum?—A. None whatever.

Q. What are the functions of the committee on publications, and what position does Dr. Bean hold upon it?—A. He is chairman of that committee. The function of the committee is to pass judgment upon all papers which are offered for publication in the Proceedings and Bulletins, and to render professional advice as to the manner of publication, and the style of illustration. In fact, it is an advisory board having charge of all matters in relation to publications.

Q. He has charge, has he not, of the publications of the Fish Commission?—A. He has now.

Q. Do you consider him a competent man for that position?—A. I know no one more competent.

Q. How long has he been chairman of the committee on publications?—A. The committee was organized, I think, in 1886, but before the committee was organized he was not only chairman, but committee, too. The publications started in 1878, and from that time until now his has been the controlling voice in regard to them.

Q. Do you consider that Dr. Bean possesses the requisite experience and judgment to qualify him for that position?—A. Unquestionably.

Q. Is it only recently that he has so qualified himself, or do you consider that he has been competent for some years?—A. He certainly has been fully competent for ten years; for twelve years, for that matter.

Q. Do you think that the Fish Commission publications are more difficult to edit than those of the National Museum?—A. I think they are less difficult.

Q. Would you consider Doctor Bean qualified to edit the Fish Commission publications?—A. Why, certainly.

Q. Do you know why he was relieved of that work about 1883?—A. I did not know that he was relieved. My recollection of that is something like this: I think the Fish Commission Bulletin was started in 1881. It was modeled upon the lines of the Museum Proceedings, and Professor Baird knowing of Doctor Bean's work in that connection, asked him to take charge of the Bulletin until it was put into proper shape; he asked him to start it. I do not think he ever had any special appointment. He was simply told to take the thing and to put it into shape. After the Bulletin was fairly started it seemed unnecessary that a man of Doctor Bean's scientific attainments should give his time to the work. He, finding it irksome, asked to be relieved from the editorship in order that he might give his time to his ichthyological work, and Professor Baird was very willing to accede to his request. But it was at his own request, I am quite sure.

Q. Was there any dissatisfaction at the manner in which he performed the work? Was he removed because of incompetency, or did he relinquish the position voluntarily?—A. He resigned, and if I am not greatly mistaken I knew of a letter written by Professor Baird to him in which he expressed the highest appreciation of him and satisfaction with his work.

Q. It was not because he was incompetent, then, that he discontinued?—A. No, sir; not by any means.

[Not long before Professor Baird's death, appreciating the importance of a regular organization for the Commission, he appointed a committee

of his own employes to report a plan of organization, which plan was adopted by Professor Goode during his administration of the office, and has been continued by the present Commissioner. An extract from said plan is appended.]

ORGANIZATION.

11. The Commissioner will control the general policy of the Commission. His immediate staff and the routine of his office will be such as he shall specify.

12. The operations of the Commission arrange themselves naturally under the four following divisions:

- I. Administration;
- II. Scientific Inquiry;
- III. Statistical Inquiry;
- IV. Fish Culture.

To one of these four divisions all employes now or hereafter to be appointed will be assigned by the Commissioner.

I.

13. The Division of Administration will comprise:

- a. The Office of the Commissioner;
- b. The Office of Accounts;
- c. The Office of Property;
- d. The Office of Records and Publications.

14. The Office of the Commissioner will be the office of general control and direction of the affairs of the Commission.

15. The Office of Accounts will be in charge of the disbursing agent.

16. The Office of Property will be in charge of the property clerk. In this office will be kept a full record of all property of the Commission, with the exception of specimens, records, and books.

17. The Office of Records and Publications will be in charge of the record clerk. In this office will be kept the official records, and through it the publications of the Commission will be distributed and accounted for.

18. The record clerk will have charge of all reports and papers approved for publication by the Commissioner which are not otherwise provided for.

19. He will keep a full record of the plates or cuts for illustration of the publications of the Commission, and make an annual report of the same for the information of the Commissioner.

20. A committee on publications will be appointed by the Commissioner, to which will be referred for final action all matter presented for publication. The secretary of this committee will act as editor, and it shall be his duty to see that the manuscript presented for publication is in proper form for printing; to edit the same during its passage through the press; and to satisfy himself that the proofs are properly examined, either by the authors of the papers, or in their absence by persons skilled in the subjects of which the papers treat.

II.

21. The Division of Scientific Inquiry will be under the immediate control of a person of proved scientific ability, who will be entitled assistant in charge of scientific inquiry, and who will direct and apportion the scientific and other researches intrusted to him by the Commissioner, determine the methods and means to be employed, receive and examine the reports of the investigators appointed, and generally direct and co-ordinate the original researches and scientific observations of the Commission in the interests of economy and unity of action. He will be directly responsible to the Commissioner for the accuracy and value of the results presented.

22. To this division will be assigned:

- a. Collaborators in scientific research;
- b. Persons employed in special investigations and experiments of a practical character;
- c. Volunteer aids and persons detailed by other branches of the Government to assist in scientific research, under the orders of the Commissioner; and such clerks and laborers as may be necessary.

23. To this division belong the "investigations and inquiries" concerning the supply of food fishes of the sea-coast and lakes of the United States contemplated by the act creating the Commission. (See par. 4.)

24. The assistant in charge will receive and examine all reports submitted by persons engaged in original research, under direction of the Commission, and all correspondence upon subjects relating to the business of his division which may be referred to him by the Commissioner. When such correspondence calls for new investigations, he will designate to the Commissioner the person or persons to whom the work should be assigned, and, when necessary, furnish estimates of the probable cost, both as to time and materials required.

25. He will keep himself informed as to the progress of the work under his direction, either by correspondence or by personal inspection, for which latter he may from time to time request the authority of the Commissioner.

26. In his annual reports he will present a detailed account of the operations of his division for the year past, embodying such reports or parts of reports from his subordinates and collaborators as he recommends for publication; statements of the cost of the work of his division for the year and of the results accomplished; and his recommendations as to the operations for the year to ensue. These recommendations will be accompanied by estimates of the amount and character of the work which may reasonably be expected, the number of assistants and quantity of new apparatus required, and the probable cost in detail of each item.

27. Specialists in scientific research, or aids who are in the permanent employ of the Commission, may be given charge of subdivisions of its work or of stations for investigation. Those so detailed and persons temporarily employed for special investigation will, so far as responsibility for property and the official business of the Commission is concerned, conform to the regulations established for superintendents of stations and for persons in separate charge. The details and methods of the work itself will be specified in each case by the assistant in charge of the division.

III.

28. Division of Statistical Inquiry. The organization of this division will be defined hereafter by a circular order.

IV.

29. The Division of Fish Culture will be under the immediate control of an assistant appointed by the Commissioner, who will be entitled assistant in charge of fish-culture, and will have the general direction of hatching and distributing stations, of railway cars, launches, and other vessels employed in the hatching and distribution of fishes and of their eggs, and of the superintendents and other employés connected with this part of the work of the Commission. He will receive and examine the reports of the superintendents of stations, and will be directly responsible to the Commissioner for the efficiency and economy of the work of his division.

30. To this division will be assigned:

- a. Superintendents of stations;
- b. Spawn-takers and other persons employed in fish culture;
- c. Messengers in charge of fish-cars, and the necessary clerks, attendants, and laborers.

31. The assistant in charge will keep himself fully informed as to the work done at the different stations, the results obtained, and the expenditures incurred, and will, from time to time, with the authority of the Commissioner, make or direct personal inspection of the stations in order that he may be prepared to present to the Commissioner such recommendations as will develop and expand the practical work of the Commission, promote efficiency, and control expenditures.

32. In addition to the officials above named, who are in the pay of the Commission, there are, under the orders of the Commissioner:

- a. Officers and enlisted men of the Navy, detailed for service in the vessels of the Commission;
- b. Officers and enlisted men of the Navy, detailed for shore duty, under the orders of the Commissioner;
- c. Officers and enlisted men of the Navy, temporarily detailed to aid in scientific research with the Commission, either afloat or ashore.

GENERAL INSTRUCTIONS.

33. All persons connected with the Commission are expected to be familiar with its regulations and circular orders and to render cheerful obedience to their superiors for the time being and a hearty co-operation with the purposes of the Commission.

34. The Commissioner may, by circular order, assign to a single person the duties of two or more of the subdivisions of the operations of the Commission hereinbefore defined.

35. Superintendents of stations and all employés acting independently will keep a daily journal of the operations of their stations or parties, noting therein the char-

acter of the work performed, the receipt or issue of property, official correspondence, the approval or certification of bills, the movements of subordinates, and all matters of importance connected with their work. This daily journal, being independent of note-books, property records, or letter-books, and intended to serve as a running index to the operations of the station or party to which it refers, is to be kept with brevity, omitting details which properly belong to other records.

36. Matters or events which appear to be of especial interest should be reported at once, through the regular channel, to the assistant in charge of division.

37. The orders of assistants in charge of divisions, employés in charge of office, superintendents of stations, or persons in charge of parties, must be obeyed whether approved by the subordinate receiving such orders or not. In case of difference of opinion, however, the subordinate may demand that the order be issued in writing, and, if the circumstances appear to him to justify such action, may remonstrate in writing to the assistant in charge of his division, through the regular official channel. (See sec. 47.) If, after a reasonable delay, there be no reply to his remonstrance, he may address a copy directly to the Commissioner, it being understood that trivial or unreasonable remonstrances or complaints will be regarded as serious acts of insubordination. In no case will the fact that a remonstrance or complaint has been forwarded be considered as a valid excuse for delay or failure to obey an order issued by lawful authority.

38. Original bills or vouchers for property purchased will not be certified for payment by the assistant in charge of division unless accompanied by satisfactory evidence that the property has been received and duly accounted for to the property office, and that the purchase has been authorized by the Commissioner.

39. Requisitions which are not in official form will be returned for correction by the assistants in charge of divisions to the persons sending the same; and they will not be submitted to the Commissioner for approval until the rules governing requisitions shall have been strictly complied with.

DAILY DUTIES.

40. The following are regular daily duties of employés charged with separate responsibility.

- a. Enter changes in daily record of property, according to the prescribed form, at the time of their occurrence.
- b. Answer and file letters received and copy the replies (in letter-book.)
- c. File receipts, invoices, and approved requisitions.
- d. File unsettled bills, and duplicates of bills forwarded to office of accounts.
- e. Enter details of the day's work in note-book.
- f. Write up daily journal.

41. The note-book referred to under "e" is to be the record of the details of the daily work of the station, office, or party, and is to be kept with sufficient fullness to enable the writer to furnish, on demand, a statement of the methods pursued in the work under his direction. The mode of entry must necessarily vary with the kind of work done; but it is recommended that, for uniformity, all note-books shall be of uniform size, and of a prescribed standard. Such books will be issued on properly approved requisition.

MONTHLY DUTIES.

42. (a) Before the end of each month all persons who have made purchases on behalf of the Commission will forward to the office of accounts the original bills for such purchases, indorsed with their certificates to their correctness. Whenever possible it is desirable that duplicate bills shall be procured from the seller, so that one copy may be retained, for future reference, in the files of the station or party purchasing. (b) Sign and certify to monthly pay-rolls of employés. (c) Fill and forward statement of leaves granted during the month.

ANNUAL DUTIES.

43. Make out and forward annual report, including a summary statement of the work for the year; reports of special researches or experiments of importance; a list of employés, and report of changes in the force during the year; statement of leaves granted during the year; recommendations regarding the operations for the year to ensue, including estimates of probable expenditures required, and recommendations as to changes in the force and material considered to be desirable.

CORRESPONDENCE.

44. Official correspondence is such as relates to the business of the Commission.

45. Official letters shall be written upon letter paper not exceeding 8 x 10 inches, so that when folded twice it will be contained by one of the regular official envelopes of the Commission.

46. The "penalty envelope" (to be procured by all authorized persons, upon requisition, from the office of records and publications) shall never be used without a postage stamp when private or personal matter of any kind is introduced into an official letter.

47. All official correspondence must be forwarded through the regular channel, that is, through the hands of the official of the Commission next superior to the writer. Letters not addressed to the next superior shall be forwarded unsealed, and the official receiving them shall indorse them either "Forwarded," "Approved and forwarded," or with such comments as the interests of the service may appear to demand.

48. Official communications from superiors to subordinates will be subject inversely to the same rule of transmission.

49. When an official letter, forwarded through the regular channel, remains unanswered after a reasonable delay, the writer may, if he thinks that the interests of the service so require, forward a copy directly to the person addressed by the original letter, stating the facts and his reasons for so doing.

50. It is expected that copies of all official letters will be kept by their writers and that files of letters received will be preserved.

51. All official correspondence by employes of the Commission serving on ship-board, relating to the work of the ship, must be forwarded through the commanding officer.

CIRCULAR ORDERS.

52. There is no provision of law for the exercise of authority in the Commission by any person other than the Commissioner. When it becomes necessary that the Commissioner shall delegate authority to any person in the Commission, whether it be for general purposes (as in the case of assistants in charge of divisions or stations) or for specific purposes, the same will be announced in a circular order, of which one copy shall be communicated to each of the persons attached to the station or concerned in the duty affected, one copy furnished to each assistant in charge of division and superintendent of station, and one copy filed in the Commissioner's office.

53. Such circular orders will be numbered consecutively, will state specifically the nature and extent of the authority delegated, and, when they relate to special duty, the duration of its continuance.

54. Circular Orders will be issued in relation to the following subjects:

- a. Changes in or additions to the regulations;
- b. Instructions affecting the general policy of the Commission.
- c. Delegations of authority by the Commissioner to subordinates affecting others than the persons designated.
- d. Appointments to the office of assistant in charge of division or office, superintendent of station, or to the charge of an independent station or party.
- e. Appointment of Inspector, or Board of Survey.

INSPECTION AND BOARDS.

55. Annually, or more frequently in the discretion of the Commissioner, an inspection of each station will be provided for by a circular order.

56. The report of the inspector will relate to the following subjects:

- a. Mode of keeping the property record;
- b. Condition of property and precautions for its care and preservation;
- c. Condition of property reported as unserviceable or for repair;
- d. Completeness of the records and file of circular orders;
- e. The needs of the station of whatever kind.

57. The report of the inspector shall be forwarded in writing, directly to the Commissioner, within ten days from the completion of the inspection.

58. Boards of survey upon property will consist of not less than two persons, and will examine and report upon the property in question according to prescribed form.

59. When it is decided to order an examination of candidates for an employment in the Commission, which is exempted by law from the operation of the civil service rules, the Commissioner will detail a Board for the purpose, made up of employes of the Commission, one of the members of which shall be a person skilled in the duties of the position to be filled.

60. Special orders will relate to the movements or duties of individuals when only the person ordered is affected. Special orders need not be numbered consecutively or communicated to others than the person addressed.

LEAVES OF ABSENCE.

61. No employe shall absent himself from duty except on Sundays and legal holidays without permission from his official superior. In case of sickness or unexpected detention notice must be promptly sent by the employe so detained to his superior, stating the cause and probable duration of his absence.

62. Persons absent on account of sickness will furnish physicians' certificates or other evidence satisfactory to their official superiors that the absence is necessary.

63. Assistants in charge of division, persons in charge of office, and superintendents of station are authorized to verbally grant leaves of absence not exceeding one day in duration to persons under their direction. They may also grant leaves of absence not exceeding two and one-half days in any calendar month, but will give the authority in writing and forward a copy to the Commissioner. Such leaves shall not be granted to the detriment of the work of the Commission except in very urgent cases. All applications for leave exceeding two and one-half days at a time shall be referred to the Commissioner for his approval.

64. A record of leaves granted will be kept in the office of accounts.

APPOINTMENTS.

65. All appointment of employes will be made by the Commissioner, and will be subject to the rules established for the "Regulation and Improvement of the Executive Civil Service," in so far as those rules are applicable to the Commission.

66. Employes whose duties are exclusively professional are exempted from examination by the civil service rules. The Commissioner may, however, in his discretion, either request the special certification of candidates for such employment from the Civil Service Commission, as provided by Rule VII, par. 5, or direct an examination as to the fitness of the candidates by a board composed of employes of the Commission.

67. In addition to the necessary professional tests, every such examination by a Board of employes of the Commission shall exact at least the minimum requirements of the civil-service rules respecting general examinations. (Rule VII.)

68. Candidates presenting evidence, by publication of original researches or diplomas or certificates from scientific or technical schools of good standing, indicating that they are properly qualified in the professional branches required, may be exempted from examination, at the discretion of the Commissioner.

G. BROWN GOODE,
Commissioner.

NOVEMBER 1, 1887.

TESTIMONY OF SAMUEL LEROY PRITCHARD.

SAMUEL LEROY PRITCHARD, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What is your name?—A. Samuel LeRoy Pritchard.

Q. Where do you reside?—A. Washington.

Q. Are you in the Government service?—A. Yes, sir.

Q. Please state in what branch and what capacity.—A. In the statistical department, division of fisheries of the United States Fish Commission.

Q. Were you serving in the statistical office of the Fish Commission during all of last fiscal year?—A. Yes, sir.

Q. Were any clerks from the fisheries division of the Census Office quartered there at intervals during that time?—A. There were some clerks from the Census Office. I do not know what division they were from.

Q. They were from the Census Office?—A. Yes, sir.

Q. Can you recall the months during which they were there?—A. They were there at odd times between September, I think, and February or January—the middle of January.

Q. Last year?—A. Yes, sir.

Q. Can you state how many different clerks were there altogether, and how many were generally there at a time?—A. Well, they would average from three to four, sometimes five and sometimes three.

Q. Were you given any official relations with those clerks?—A. I was told to give them the records from which to get the information they desired.

Q. Did you pick out from the files the records which they made use of, and explain their contents, etc.?—A. Yes, sir.

Q. Were they given all the accommodations they required, and were they treated with proper civility?—A. Most assuredly, sir; so much so, in fact, that they always thanked me when leaving for the courtesy, etc.

Q. Did they seem to be satisfied with the treatment they received?—A. Yes, sir.

Q. Did the demands of the Census clerks for information and explanations interfere at all with the progress of your own work or with that of other clerks in the office?—A. Well, they did sometimes, and as soon as they were gone I found that the records were mixed up to such an extent that it required considerable time to search them out.

Q. Were the Fish Commission clerks in the habit of conversing with those from the Census Office during hours of work, excepting on matters of business?—A. No, sir.

Q. Did the Fish Commission clerks pay constant attention to their own work, or were they in the habit of idling and of neglecting their duties?—A. So far as I know they paid attention to their own work.

Q. Were they in the habit of reading newspapers during office hours, or of doing other things which might interfere with the conduct of their business?—A. Well, sir, part of the duties of the chief of the room is receiving slips, newspaper articles relating to the fisheries of the country, and he used to read them over before filing them away.

Q. They are not in the habit of spending their time reading newspapers?—A. No, sir.

Q. Do you know if any of the Fish Commission clerks in the statistical office twitted the Census clerks and commiserated them for having to work so hard under Mr. Smiley, remarking at the same time that they had an easier time in the Fish Commission?—A. No, sir.

Q. You did not hear anything of that kind?—A. No, sir, not at all.

Q. Do you know of any such conversations with respect to the clerks of any other office of the Fish Commission?—A. No, sir, I do not.

TESTIMONY OF HUGH M. SMITH—Recalled.

HUGH M. SMITH, being recalled, testified as follows:

By the CHAIRMAN:—

Q. At times during the last fiscal year, certain Census Office clerks, who were sent down to the Fish Commission building to obtain information from the files, were quartered in the statistical office of which you have charge. Mr. C. W. Smiley states that those clerks invariably reported to him about the laziness and the looseness of affairs at the Fish Commission. Clerks were reading newspapers in office hours, and were not attending to their work as they should have been. They also said that they were twitted and commiserated for having to work so hard under Mr. Smiley, while in the Fish Commission it was very different. What can you say about that? Did you ever hear any such talk from them?—A. No; they never said anything to any one in the office about that.

Q. Is it true that the clerks in the statistical office were in the habit of spending their time reading newspapers and so on.—A. Not at all, sir.

Q. Were you at the statistical office in Washington during the entire fiscal year 1889-'90?—A. I was away in the fall from about the middle of August until the middle of October.

Q. Who was in charge of the office while you were away?—A. Mr. Ravenel.

Q. Were any Census clerks of the fisheries division at work in that office during that time?—A. Yes, sir.

Q. While you were in Washington should you not have been cognizant of any matters going on in your office that came under the observation of the Census clerks during office hours?—A. Yes, sir.

Q. Can you throw any light upon the subject of the charges made by them to Mr. Smiley?—A. Well, I think that Mr. Smiley was misinformed. I do not think that the census clerks who were sent down there had sufficient knowledge of our work to pass any judgment on it. Generally speaking, I should say the charges are without any foundation.

Q. Are not the clerks under your charge subject to the same regulations as the other clerks of the Fish Commission in respect to their duties and the general office discipline?—A. They are.

Q. Was it the case that some of your clerks, at the time the Census clerks were in your office, did not conform to those regulations? If so, please explain the circumstances.—A. The only possible ground there could have been for such a charge was that we receive a large number of newspapers and newspaper clippings bearing on the fisheries, and it has been the duty of one or more of us to look over these, and to get out certain data to be used in our work.

Q. That might explain the comments of the Census clerks that your clerks spent their time reading newspapers?—A. Yes, sir.

Q. They were looking up matter to be preserved?—A. Yes, sir.

Q. Did you detail any one of your clerks to get out the records as they were required by the Census clerks?—A. I did.

Q. What was his name?—A. Mr. Pritchard.

Q. He is still in the employ of your office?—A. Yes, sir.

Q. Were the Census clerks treated with proper civility in your office? Did you give them all the accommodations they needed, and were the records so explained to them that they might have no trouble in obtaining the facts they were looking for?—A. Every accommodation was extended to them. We went to the trouble of getting out extra tables and desks for them, furnishing stationery, pens, ink, paper, etc.

Q. And explained the records so that they might have no trouble in obtaining the facts they desired?—A. Yes, sir; nearly every one in the office has, at one time or another, put himself out in order to elucidate the records in the interests of the Census Office.

Q. Did the assistance thus rendered interrupt the work of your office to any extent?—A. It did at times, considerably.

Q. Did the Census clerks leave the records of your office in as good shape as they found them?—A. No, sir; they were left in quite bad order. In fact, some of the things that we had a record of have never been found since they left. We suppose they are there, but they have been so misplaced that we could not find them.

Q. If the reports concerning laxity of discipline, etc., emanating from the Census clerks, did not apply to your office, to what office or offices could they have had reference, and what opportunities had those Census clerks for making observations in respect to that matter?—A. I do not know to what other office they could have had reference. For a short time after coming to the Fish Commission they were in Mr. Smiley's room, that is, the room formerly occupied by him.

Q. They had nothing to do with the other offices except the statistical office?—A. No, sir, not at all.

TESTIMONY OF W. DE C. RAVENEL.

W. DE C. RAVENEL, being duly sworn and examined, testified as follows:

By the CHAIRMAN:

Q. What is your name?—A. W. de C. Ravenel.

Q. Where is your residence?—A. Washington, just at present; Falls Church, properly.

Q. Are you employed in the Government service?—A. Yes, sir.

Q. Please explain in what branch, and in what capacity.—A. I have been acting as superintendent since I came in. I was superintendent of St. Jerome's Station.

Q. Where is that?—A. On the Chesapeake Bay, just six miles north of Point Lookout. That station was given up in 1887, and I then took charge of the Battery Station on the Susquehanna River. I have also been engaged in collecting statistics along the coast during parts of the last three winters.

Q. Were you acting in charge of the statistical office of the Fish Commission during any part of last fiscal year, while Dr. H. M. Smith was absent from Washington?—A. I think from about the 8th of August to November, the latter part of October.

Q. Last year?—A. Yes, sir.

Q. During that time were any clerks from the fisheries division of the Census Bureau quartered in that office?—A. There were.

Q. How many of those clerks were present there at a time?—A. Three ladies and one young man—four was the largest number.

Q. Can you tell how many clerks were there altogether?—A. No, sir.

Q. They changed?—A. I know of two different men who were there at different times. There may have been five altogether, but four is what I recollect.

Q. Mr. C. W. Smiley, in charge of the fishery census, states that those clerks invariably reported to him about the laziness and looseness of affairs at the Fish Commission. Clerks were reading newspapers in office hours, and were not attending to their work as they should have been. They also said that they were twitted and commiserated for having to work so hard under Mr. Smiley, while in the Fish Commission it was very different. Do you know anything about that?—A. Not anything that I can recollect. During Captain Collins's absence his paper files were sent up to the office, and it was my duty to look them over, and to mark them, etc. I really do not know of anything else of that kind.

Q. You did not hear any talk about your having an easy time and those poor Census clerks having to work so hard?—A. I doubt if I should have commented upon it without knowing who they were.

Q. While you were acting in charge, should you not have been cognizant of any matters going on in your office that came under the observation of the Census clerks during office hours?—A. I certainly should have. I may have been off on leave for a few days.

Q. Were not the clerks under your charge subject to the same regulations as the other clerks of the Fish Commission in respect to their duties and the general office discipline?—A. Certainly.

Q. Was it the case that some of the clerks under your charge at the time the Census clerks were in your office did not conform to those regulations? If so, please explain the circumstances.—A. I know of

one case. Mr. Snell, who did a great deal of work at home, occasionally came late. He worked during lunch hour, and frequently after office hours, and made up more time than the legitimate time for work in the office.

Q. Were your clerks in the habit of conversing with those from the Census office, during business hours, on matters not connected with the work of the Census?—A. Not that I am aware of. I do not think that a conversation was ever started by us in any instance, because I really did not know the names of the people who worked in the office.

Q. Those clerks who came to the Census Office attended to their work, as a rule?—A. Yes, sir.

Q. And you attended to yours?—A. Yes, sir. Of course we answered a good many questions. They were green about the work.

Q. Were the Census clerks treated with proper civility in the office? Did you give them all the accommodations they needed; and were the records so explained to them that they might have no trouble in obtaining the facts they were looking for?—A. They were certainly treated with courtesy, and everything in the world was done to make their work easy, and at very serious inconvenience to ourselves. I frequently had to have work done in advance for them, stopping men doing our work, and at all times we gave them any information they wanted at serious inconvenience.

Q. Did the assistance thus rendered interrupt the work of your office to any extent?—A. Frequently we were interrupted half an hour at a time.

Q. Did the Census clerks leave the records of your office in as good shape as they found them?—A. They left them in very bad shape. They were very much mixed up. I suppose it was due to their greenness in the matter. I called the attention of the young man in charge to it, and he said he would be more careful in the future, but they were still very much mixed up, and it was months before they were straightened out.

Q. If the reports concerning laxity of discipline, etc., emanating from the Census clerks, did not apply to the statistical office while you were in charge of it, or otherwise present, to what office or offices could they have had reference, and what opportunities had those Census clerks for making observations in respect to that matter?—A. I am under the impression that some of the clerks worked in the library, which used to be under Mr. Smiley. I do not know whom it was under then. I think Mr. Latimer. That is the only place except our office.

At 3 o'clock p. m. the subcommittee adjourned.

IN THE SENATE OF THE UNITED STATES.

FEBRUARY 24, 1891.—Ordered to lie on the table and be printed.

Mr. WASHBURN presented the following

APPEAL TO THE SENATE FROM THE NATIONAL CONVENTION OF THE REPRESENTATIVES OF THE COMMERCIAL BODIES OF THE UNITED STATES, ON BEHALF OF HONEST INSOLVENTS, CONSUMERS, RETAILERS, WHOLESALERS, MANUFACTURERS, COMMERCIAL, INDUSTRIAL AND PROFESSIONAL BODIES AND THE PEOPLE AT LARGE, PRAYING FOR THE CONSIDERATION AND PASSAGE OF THE TORREY BANKRUPT BILL AT THE PRESENT SESSION, AND CALLING ATTENTION TO THE FACT THAT THE PEOPLE ARE IN FAVOR OF IT, AND THAT THE ONLY OPPOSITION OF MOMENT, OUTSIDE OF CONGRESS, IS FROM A FEW GREAT HOUSES WHO HAVE SELFISH INTERESTS IN OPPOSITION TO ITS ENACTMENT; WITH AN APPENDIX CONTAINING SPEECHES IN FAVOR OF BANKRUPTCY LEGISLATION, THE NAMES OF THE OFFICERS AND COMMITTEEMEN OF THE NATIONAL ORGANIZATION, THE BODIES WHICH HAVE INDORSED, AND THE CITIZENS WHO HAVE PETITIONED FOR THE ENACTMENT OF THE TORREY BANKRUPT BILL.

WASHINGTON, D. C., *February 17, 1891.*

TO THE HONORABLE THE SENATE OF THE UNITED STATES:

We, the undersigned, as the officers and chairmen of committees of the National Convention of the Representatives of the Commercial Bodies of the United States, on behalf of honest insolvents, consumers, retailers, wholesalers, manufacturers, commercial, industrial, and professional bodies, and the people at large, respectfully but earnestly appeal to you for the consideration of the Torrey bankrupt bill, which, if enacted, will make more secure the property rights of the whole people, and release hundreds of thousands of your honest fellow-citizens from their hopeless bondage of debt.

To the Senators who are favorable to bankruptcy legislation:

To the Senators who believe that the power conferred by the Constitution to enact laws upon the subject of uniform bankruptcies should be exercised, and that the Torrey bill is a wise embodiment of the laws contemplated, we appeal to stand steadfast in their convictions and to insist at all hazards upon the final enactment of that measure at this session. By so doing they will provide for the release from debts they

can never pay, of hundreds of thousands of honest, earnest men who have been the subjects of misfortune without their own fault; their release will restore them to the great army of men who conduct the commerce of the country, and enable them to better support their families and educate their children. The passage of that bill will lessen the perpetration of fraud, prevent commercial failures, make it possible for debtors who are hard pushed to have meetings with their creditors for the protection and advancement of their mutual interests, and in all respects substitute equitable dealings for selfish strife in reference to the transactions on credit by which the debtor and creditor classes are created.

To the Senators who are opposed to bankruptcy legislation :

To the Senators who are opponents of the proposed legislation we earnestly appeal for the consideration of the subject, because large numbers of their constituents have prayed for it, and all of their material interests will be promoted in the event the consideration shall be followed by the passage of the bill.

We are conscious that they can encompass the defeat of the measure at this session by postponement. We earnestly appeal to them not to do so, but to permit the bill to be voted upon, to the end that the commercial bodies of every State, the petitioners from every part of the country, the men who are interested in the subject, but who have remained silent, and those citizens who, by their depressed financial conditions and the toil incident thereto, are not fully advised of the movement in behalf of this legislation, or whose voices are too weak to be heard at the National Capitol, may know whether the Senate will or will not give heed to the earnest and repeated appeals which have been made in person and by petitions, resolutions, memorials, addresses, and letters in favor of this bill.

*To the Senators who are favorable and those who
are opposed to bankruptcy legislation :*

To the Senators who are friendly and those who are opposed, we appeal for the immediate passage of the bill, and direct attention to the fact that the mainspring of action of every opponent outside of Congress of this legislation is selfish.

The only opposition of moment, so far as we know, to the enactment of this bill comes from or through a combination of a few great houses, headed by one which has most industriously opposed the legislation asked for by the people. It has attempted to arouse prejudices against the proposed law because of wrongs which were perpetrated under the bankrupt law of 1867. Every protest against this measure which has been filed at the present session, save about three, is on a printed blank, with copies of which this house has flooded the country.

Most of the great houses in every line have supported our cause in the belief that its success would lessen the perpetration of fraud and because they were willing to take equal chances with their competitors and accept reciprocal rights and responsibilities with the persons from whom they purchase and to whom they sell.

The members of the house referred to, and of the few other great houses in sympathy with it, have selfish interests in seeking to defeat the enactment of this bill, among them the following :

The bill prevents the giving and receiving of preferences; they in their own selfish interests wish the perpetuation of the present dissimilar provisions of the several State laws, as they are by the espion-

age exercised over their patrons, and the ability of their large corps of lawyers, enabled to secure preferences by voluntary means or compulsory processes and collect the whole amount due, or apply the whole of the debtor's estate to the payment of their claims, and then require the payment of the balance out of future earnings as a condition precedent to permitting them to use their names and enjoy all the rights of free-men in relation to property.

The bill is designed to enable honest insolvents to secure discharges from their indebtedness over and above the amount paid by their estates in dividends; they prefer to secure by compulsory process, if necessary, such parts of their claims as they can, and then pursue the debtors the rest of their lives to secure the balance if possible.

The bill makes it possible to have creditors' meetings when a debtor becomes pressed and needs the advice and assistance of his creditors both for his and their benefit; they are said to have private meetings with their debtors and their attorneys, and unless the debtors will secure their claims, irrespective of the rights of other creditors, levy under compulsory processes upon their property, no matter whether there are or are not grounds for their so doing.

The bill provides for arbitrations and compromises; they can afford to "bulldoze" their debtors and associated creditors who have less capital invested in business than they have, and enforce the acceptance of their dictatorial terms or block any form of adjustment, although it may be satisfactory to the debtor and all the other creditors.

The bill provides for the increase and maintenance of confidence between business men in different parts of the country, and will thereby enable customers who can buy now only from certain houses in near markets to buy in all accessible trade centers; the present imperfect State laws enable them in effect to own their debtors and force them to continue as their customers by preventing their competitors from selling to them for fear of being swindled.

In other words, the great house in question and others which pursue a like course do not want a law for the greatest good to the greatest number because they find it financially profitable to promote distrust, encourage strife, and have their business rights adjusted by a different set of laws every time a State line is crossed, instead of by the provisions of a uniform, equitable act, which provides for a quick and inexpensive administration of bankrupts' estates. They prefer to be judge, jury, and executioner of the rights of their debtors, instead of having them determined according to the provisions of a general and equitable law under which all persons will be treated alike.

The issue so far as the people are concerned is unmistakably between a few great houses in opposition to the bill and the mass of honest insolvents, consumers, retailers, wholesalers, manufacturers, commercial, industrial, and professional bodies, and the people at large in favor of the bill.

Politics are not involved in the issue. The subject of bankruptcy has not been contained in party platforms. All of the political parties contain many friends and a few opponents of the bill.

Sectionalism has not played any part in the discussions which have been engendered. The men who are dependent upon credit in their various callings irrespective of the places of their residence realize that one of the resultant effects of the enactment and enforcement of the bill will be to extend their credit, enlarge the number of sources from which they may derive credit, protect them from precipitate com-

pulsory processes, and avoid controversies between their creditors, which, irrespective of the result as between them, of necessity bring about the destruction of the debtors' property, the dissipation of their good will, and engulfment in debt, all of which could be avoided by substituting for the selfish rule by which preferences are given the equitable rule by which a pro rata distribution will be made to all creditors of the same class and the debtors be discharged.

The men who are the recipients of credit are also its dispensers, and in their capacities as such, without regard to the latitude or longitude of their habitations within this country, are desirous of having the rule of equality of all people of equal rights applied as a substitute for the rule of "might makes right," or "the end" (the collection of a debt) "justifies the means" (the commission of perjury in attachment and replevin suits by making false statements as to the grounds for such actions, the unnecessary destruction of property, and the dissipation of good will by the commencement of compulsory processes against honest, solvent, but temporarily embarrassed men in business).

There is no class controversy involved, as the leading men in all classes demand the recognition of the rule of the greatest good to the greatest number, and say that the passage of this bill will be a compliance with their demand.

The debtors and creditors of every section, of every shade of political conviction, and of every calling join in saying that this bill is comprehensive of their best interests, and the members of each class say that it is not inimical to them by giving greater rights than it ought to members of the other class. There is among the archives of Congress a very large number of expressions upon the subject of this bill, and yet there is not one by a debtor saying that he wants his rights enlarged or the creditors rights abridged, and not a single complaint from a creditor asking for additional safeguards for his property interests or remedies as against his debtor in addition to those provided. The conclusion is irresistible that the bill is a fair and absolutely just measure.

There does not prove to be an issue between the country and town folks in regard to this bill; both are desirous of enforcing the rules of common honesty and willing to live and act under the provisions of this measure, which will if enacted fully protect their rights and define their responsibilities.

It is the old familiar struggle of the people against organized, selfish capital in one of its many forms. The latter may temporarily be the victor, as it frequently is, but the former are ultimately bound to triumph, as they always do.

The men who conduct the commercial, industrial, and professional transactions of the country and the honest, unfortunate insolvents submit that their lives are measured by the same span as yours; that they have the same interest as you in the promotion of the welfare of the whole people; that their moral responsibility in relation to this measure is, by reason of their recommendation of it, the same as yours will be when you consider and vote upon it, and that their duties are the same as yours to their dependents, their fellow citizens, and their God. They speak to you, who enact legislation for the protection of the life, liberty, and property of the people; they do not ask aught for themselves which is not to be enjoyed by every citizen of our great country, but do ask for a law which shall inculcate morality by the prevention of fraud, enforce the rules of equity in the marshaling and distributing

of the assets of insolvents, and recognize the public policy which justifies the discharge of honest insolvents.

In view of all which the undersigned earnestly appeal to you to pass the Torrey bankrupt bill at the present session.

Respectfully submitted.

JAY L. TORREY,
President.

PETER NICHOLSON,
Treasurer.

JAMES T. WYMAN,
Secretary.

WM. E. SCHWEPPE,
Chairman of the Executive Committee.

LOWE EMERSON,
Chairman of the Congressional Committee.

BREEDLOVE SMITH,
Chairman of the Bankruptcy Literature Committee.

WM. T. BAKER,
Chairman of the Finance Committee.

JAS. O. BROADHEAD,
Chairman of the Presidential Committee.

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ADDRESSES

OF THE

CHAIRMAN AND MEMBERS OF THE PRESIDENTIAL COMMITTEE
OF THE NATIONAL CONVENTION OF COMMERCIAL
BODIES IN LAYING BEFORE

HIS EXCELLENCY, BENJAMIN HARRISON,

PRESIDENT OF THE UNITED STATES,

THE TORREY BANKRUPT BILL,

AT THE WHITE HOUSE, ON MONDAY, NOVEMBER 18, 1889.

ADDRESS OF COL. JAMES O. BROADHEAD,

Chairman of the presidential committee of the National Convention of the Representatives of the Commercial Bodies of the United States, ex-president of the American Bar Association, ex-president of the National Bar Association, and ex-member of Congress.

Mr. PRESIDENT: We, as the presidential committee, have been intrusted with the pleasant duty of laying before you the labors of two national conventions of the representatives of commercial bodies, organized to formulate and secure the enactment by Congress of an equitable, uniform bankrupt law, and to respectfully petition you to recommend to Congress in your forthcoming message the enactment of such a law in the form adopted. We have come to-day from all parts of the United States to perform that duty.

The wisdom of the fathers of the Republic in vesting the Congress of the United States with the power to establish a "uniform system of bankruptcy throughout the United States" was never more manifest than it is at the present day. The commercial relations existing between the several States are more extended and more intimate than they ever were before; the facilities of transportation have served to multiply the products of agriculture and manufactures and increase the demand for the necessities and luxuries of life, and the commercial activity of our people has therefore found a wider field for its exercise.

The most important effect of an equitable and permanent system of bankruptcy is to establish upon a firm basis the commercial interests of the country, to assure to those who deal in the products and manufactures of the various sections of our widely extended territory, as well as the producers and manufacturers themselves, that in dealing with their customers they will all be treated alike, that no local influences or local legislation will enable a debtor in failing circumstances to abuse the confidence which has been given him by a distant creditor, but that one law will govern all.

This assurance will extend and strengthen commerce, and afford, as I believe, the best safeguard against monetary crises such as have occurred from time to time, and from which all suffer in a greater or less degree.

Heretofore it has only been when one of those monetary revulsions came, and for a time paralyzed the trade and commerce of the country, that our national legislators were driven to the enactment of temporary bankrupt laws, and the result has been hasty and improvident legislation.

Now, that our country is blessed with a prosperity unsurpassed in its previous history, is the time in our judgment for calm, deliberate, and wise legislation on that subject.

The representatives of commercial bodies from various parts of the United States have held four national conventions, two at Washington in 1881 and 1884, respectively, and one at St. Louis and one at Minneapolis in 1889. These conventions have had the subject of bankruptcy

alone under consideration. As a result there has been adopted and recommended for enactment a measure named the Torrey bankrupt bill.

We submit a printed copy of this bill, in the belief that upon an examination of its provisions you will find that it meets many of the objections which have been made to former acts, and that under it bankruptcy proceedings will be less expensive and more expeditious, and that better safeguards are provided against mismanagement and fraud on the part of the officers who are charged with the settlement of bankrupt estates than under preceding similar laws.

Its provisions are briefly summarized as follows:

Original jurisdiction in bankruptcy matters is conferred upon United States district courts in the States and Territories, and the supreme court of the District of Columbia.

The referees, who take the place of the registers under the former law, are limited in number, in this, that there can not be more than one for each Congressional district within the territory of the bankrupt court. Their territorial jurisdiction is fixed and may be changed from time to time by the tribunal which appoints them, and the number of referees is limited to those before whom there are pending at least fifty bankruptcy cases. The court may order the transfer of cases from one referee to another. The compensation of the referee is to be fixed by the judge, but is not to exceed the sum of \$1,000 per annum, and \$10 for each case concluded before him, and actual and necessary expenses, all of which is to be paid out of the National Treasury. Referees are not paid the \$10 fee due from the Government in each case until it is concluded and the papers are returned into the clerk's office.

The referees will hold the first and subsequent meetings of creditors and dispose of such matters in controversy as may arise at such places within their respective districts as will best serve the convenience of parties interested.

* * * * *

Trustees take the place of assignees, under the old law; they are nominated by the creditors at their first meeting. The trustees, under the direction of the court, may submit matters in controversy to arbitration, and the finding of the arbitrators will have the same force and effect as reports and findings of masters in chancery. In this respect it differs from the former law, both as to the mode of appointing arbitrators, their number, and the effect of their award. Matters in controversy may also be compromised or litigated. The trustees receive a fixed compensation, not to exceed a certain percentage upon the amount of money paid out in distributions to creditors. Trustees are not paid commissions, except upon dividends paid to creditors.

Litigation may be conducted in such State courts as will be most convenient to the parties interested.

Dividends to creditors may be declared at any time by order of the judge of the bankrupt court, and the referee is required to declare a dividend within thirty days after a claim is allowed, if the cash in hand in excess of the amount necessary to pay preferred debts, and in excess of claims which will probably be allowed, equals five per centum or more.

The petition of a bankrupt for a discharge must be filed after two and within six months after the adjudication of bankruptcy, unless it appear that he was unavoidably prevented from filing his petition for discharge within the six months, and then he may be permitted to file it within twelve months. Discharges will not be granted unless the applicants are honest men and have conducted their business accord-

ing to reputable business methods. A discharge may be set aside within two years after being granted if it shall transpire that the same was fraudulently obtained.

In cases of involuntary bankruptcy the proceedings may be instituted by three or more creditors whose demands equal or exceed \$500. If the number of creditors is less than twelve, one or more creditors whose demands equal or exceed \$500, may commence proceedings. The proceedings against the bankrupt must be instituted within six months after the commission of the act of bankruptcy in cases of involuntary bankruptcy. The acts of bankruptcy are more numerous and explicit than under any preceding act.

Any person owing debts to the amount of \$500 may become a voluntary bankrupt, upon the surrender of all his assets for the benefit of his creditors.

A compromise may be offered by a bankrupt after he has filed his schedule of assets and list of creditors and been publicly examined as to the causes for his failure, the amount and whereabouts of his assets, and his dealings with his creditors and others. If an offer of compromise is for 50 per cent. or more, and is concurred in, in writing, by a majority of the creditors and the amount to be paid or securities to be given have been deposited, subject to the order of the court, all of the creditors will then be notified and at a time fixed by the court the question of the confirmation of the composition will be considered. A compromise may be set aside within 6 months after being confirmed if it shall transpire that the same was fraudulently obtained.

The bankrupt will be allowed the exemptions provided by the laws of the State in which he lives.

The criminal provisions of the bill are most stringent. The bankrupt may be imprisoned, with or without hard labor, for a period not to exceed 3 years, for fraudulent acts perpetrated before or after being adjudged as such, or for the destruction of evidence, or the wrongful removal of property. Bankruptcy officers may be punished by imprisonment for a period of not more than 2 years, or by a fine of not more than \$5,000 for embezzlement or fraudulent appropriations of the estate. It is confidently anticipated that this provision will have a salutary preventive effect, and will stop, to a great degree, many fraudulent practices that are now openly perpetrated.

The costs of administration under this bill are more economical than it has heretofore been thought possible to make them. The clerk of the bankruptcy court is to receive a filing fee at the institution of every case of \$10, and not to receive any further fees. Estates which pay dividends in excess of \$5,000 will pay to the Government 1 per cent. on the total amount. One-half of 1 per cent. will be paid by all estates in which a composition is confirmed.

In its general scope the bill interferes but slightly with the laws of the several States, aside from those upon the subject of insolvency. Its machinery is comprehensive and yet simple. The safeguards with which it surrounds an estate are ample to prevent it from being lost or improperly appropriated. The provisions are most complete for a speedy distribution of the assets to the creditors. Expensive and tedious delays are most carefully guarded against, and on the whole it seems calculated as a proper substitute for the many incongruous and inefficient State insolvency laws, and promises to meet with the approval of the unfortunate debtor as well as the unfortunate creditor, and to prove a material aid in sustaining and fostering the commercial interests of the country.

These provisions of the bill submitted to you are referred to for the purpose of showing that the process of winding up the estate of a bankrupt is better guarded, more expeditious, and less expensive to the parties concerned than it has been under any former law, State or Federal.

We believe that this bill is just to the debtor and the creditor, that if adopted it will give a renewed stimulus to the trade and commerce of the country, that it will inspire confidence and extend credit where it is most needed, and that it will establish business of all kinds throughout the whole country upon a more enduring basis.

We, therefore, most earnestly petition you, in the name of the commercial interests of the country to recommend to Congress the enactment of a uniform, equitable bankrupt law in the form here presented.

ADDRESS OF MR. JOHN M. BARTLETT, OF MINNEAPOLIS.

MR. PRESIDENT : After the able manner in which this great question has been presented I would not ask for further consideration, but that the constituency I in part represent, would expect me to assure you of their hearty coöperation in having enacted by the coming Congress a national bankruptcy law. The commercial bodies of the city of Minneapolis expect its members who are honored with a position on this committee, whose duty it is to acquaint you with the sentiments of the commercial interests of the country upon this question, to urge you to bring before Congress, in your forthcoming message, the necessity for the enactment of a uniform bankruptcy law; believing, as they do, that such a law would have a beneficial effect in harmonizing and adjusting that business confidence so essential to our commercial and national interests, which have for the past few years been perceptibly out of harmonious adjustment.

For three years last past, while Congress has been discussing a national bankruptcy law, the board of trade and chamber of commerce of the city of Minneapolis have been unreservedly committed as favoring the enactment of such a law and have unanimously declared in favor of the Torrey bill since its final revision at a meeting called for that purpose at Minneapolis, September 3 and 4, 1889, and represented by nearly all the leading commercial bodies in this country.

The National Board of Trade, at its recent meeting in Louisville, adopted a resolution favorable to the passage by Congress of the Torrey bankruptcy bill; this meeting, national in its character, must be considered as a fair representative of the needs of the people, and its opinion entitled to consideration as the superiority of the features embodied in that measure over those of any other previous bill or legislation upon the bankruptcy question.

The New York *Times* well says, in speaking of the Torrey bill—

It is in substance a law to protect the honest merchant, to punish the dishonest merchant, and to provide for a prompt, equitable distribution of the assets of bankrupts at a minimum cost, and that it would be difficult to frame a definition of the legitimate ends of a national bankruptcy law that should be more comprehensive and more sound than this.

The necessity for a new bankruptcy law has induced many States to enact insolvency laws. It is no doubt true that such legislation by States is actually harmful to the commercial interests of the country.

Such legislation being confined to the limits of the State in which it is enacted renders uncertain and dangerous credits, which under a national law would secure to business that commerce between the States so essential to commercial prosperity, and one of the fundamental principles of our Constitution.

The claim is made, no doubt with some justice, that home creditors have preference in nearly all failures where settlements are made under State laws.

I believe I express the almost unanimous sentiment of the business men of this country when I assure you that a national bankruptcy law is demanded and expected at the earliest date that Congress can properly give that due consideration to the matter which its importance demands.

ADDRESS OF HON. LOUIS BUSH.

President of the New Orleans Board of Trade, Limited.

MR. PRESIDENT: The Constitution of the United States confers on the Congress special power and authority "to establish uniform laws on the subject of bankruptcy throughout the United States."

This grant of power is one of many proofs of the wisdom of those who enacted that remarkable instrument. They doubtless foresaw the growth of the country in extent and in population, and in consequence considered the vast increase in business which such development must bring, and the magnitude to which would grow interstate and international intercourse and commerce. They undoubtedly realized that numerous and possibly conflicting and contradictory systems of insolvency in the several States might lead to grave inconvenience and serious loss, and they therefore provided this important and salutary clause.

The interstate interests of our country are so diversified and the commercial relations of the States so important and blended one with the other, that a general system of fair and equitable expeditious liquidation between debtor and creditor is indispensably necessary to avoid heavy losses and remove vexatious delays. In truth, our internal trade and commerce is the principal foundation upon which rests, and must continue to rest, our prosperity.

A law is, therefore, imperatively necessary within the scope of constitutional authority, to regulate these relations, that the debtor or creditor from every State may know that wherever his claim is asserted he is under the protection of a statute which guarantees his rights. Nay, it may even be truthfully said that such a law serves forcibly to unite more firmly the various States which form our compact of union; for, by its operations, we would be made to feel that we are not only citizens of the State of our residence, but that we are likewise citizens of the United States. Nothing, then, can be more proper than a general statute which is framed with such a comprehensive view to benefit the people of our country.

Since the repeal of the law of 1867, on bankruptcy, the entire mercantile community of our country has been relegated to some forty different systems of State insolvency, to the great detriment, it may well be said, of the honest creditor, as well as the injury, at times, of the unfortunate debtor. Such State systems are necessarily local in

character and jurisdiction. They can not bind the foreign creditor who declines to take a part in the proceedings. They can not discharge the honest debtor from the claims of foreign creditors, unless they choose to come in and be bound by the action of the State court.

Such local systems, then, are of little if any use in interstate and international commerce, by far the largest and most important business of our country. In fact, they frequently paralyze our commerce, and often have the effect of retarding the progress of important mercantile transactions.

We need, therefore, for the full protection of the honest creditor and the full relief of the honest and unfortunate debtor, a national system of bankruptcy, as contemplated by the Constitution, the enactment of which should be hastened, that our commercial expansion and advancement in the development of the resources of our country may not be hampered or retarded.

We should not be wedded to any particular methods in such a matter. They should be as simple, expeditious, and economical as possible; and, in this, it is respectfully submitted and urged that the Torrey bill, which has received the approval and recommendation of the national convention of the representatives of a great part of the commercial bodies of this country, meets the requirements of the situation, and should receive the favorable consideration of Congress.

To your especial attention, Mr. President, we ask leave to present this bill, and respectfully request that, if upon such investigation as the importance of the subject demands, you should deem it wise that it should receive legislative sanction, you should be pleased to place the subject before Congress in such form as will subserve the general interests of our people.

ADDRESS OF HON. JOHN H. DOYLE, OF TOLEDO, OHIO,

President of the National Bar Association.

MR. PRESIDENT: I would select a period of the greatest commercial evenness and tranquillity in which to frame, discuss, and enact a law establishing a uniform and equitable system of bankruptcy. There is enough in the financial and business history of every people to give to the thoughtful legislator all the benefit of experience needful to direct his mind to the necessity of such a law, and the agencies to make it most effectual and beneficial. There is the closest analogy between the motives which prompt the wise man, in his days of average prosperity, to provide against the possible reverses which may come to him, and the enactment of laws which are to govern the whole body of men in their financial relations with each other and with government. Financial and commercial disturbances come into the history of nations at very unexpected times. The greatest preventive is commercial and financial honesty. Any law or system of laws that will aid in securing that ought certainly to be adopted. It would seem to be self-evident that laws which would so adjust the rights and remedies of parties that creditors would be unable, by combinations with their debtors, to secure unfair advantages; and debtors unable to make either unlawful preferences or dishonest concealments; but would protect the rights of each, would tend as far as legislation ever can to promote such honesty, and that the framing of such a law could best be done when the temptation to make bad law to meet special cases of hardship did not exist.

I am not at all in accord, therefore, with the view so often urged, that because of existing commercial prosperity the needs of a bankrupt law are not immediate or pressing. Pressure and excitement are the worst adjuncts or motives to legislative action, and the poorest promoters of legislative wisdom. A bankrupt law should be so framed as to be neither an instrument of oppression in the hands of the creditor nor a place of refuge from honest demands for the debtor. It should preëminently be a system of equity, and should be considered and adopted in a purely judicial atmosphere and spirit. It should not be a forced product from any unnatural or abnormal condition of either great financial disaster, or the reverse. It should be uniform, not only as a question of territory, but also of time and circumstances.

Like all systems of equity, it should be enduring and of universal application. Its aim should be to prevent both fraud and oppression. It should require honesty and good faith, and when those exist it should relieve from undue hardship, inequitable forfeitures, and unmerited misfortune.

For these reasons I urge the attention of the President and Congress to the subject now. I will not go into a discussion of the merits of the system of bankruptcy. That would only be to repeat what has been so often said, and what must be familiar to all whose position or duty has led them to any consideration of the subject. Resolutions have been passed, quite generally, by the various trade organizations in my section of Ohio, declaring the belief that a proper law of this kind will enable honest bankrupts to be discharged from their burdens; honest creditors to realize the advantage of having estates quickly and economically administered; give confidence and security to the trade of the country, and remove the difficulty that is found in the divers insolvent laws of the States, in securing justice by an approach to speed and uniformity. State lines should be purely imaginary in the commerce and business of the country. The telegraph makes contracts of the greatest importance, between citizens of States most remote from each other, possible in a few minutes of time, and the great highways of travel and carriage are built and operated without reference to boundary lines, making prompt delivery and exchange of the commodities of the most distant places a daily affair.

Uniformity in the laws and remedies governing these transactions is the great need of the time. And how to secure it is now occupying the attention of many of the thinking men of the nation. While this may not be attained in the very near future so far as the laws governing the contracts themselves are concerned (those being matters largely within the control of the States), Congress has the power to give uniformity in the matter of the enforcement of claims arising out of them and uniformity in the tribunals in which they shall be enforced. This power exists in Congress alone. It is conferred upon it by the Constitution. Even if it were possible to obtain from the States uniform laws on the subject, so that the legislature of each State would enact the same statute, and no constitutional difficulties were encountered, there would, nevertheless, be the same conflict of construction by the State courts that we now find in the interpretation of other statutes of exactly similar language.

There is but one court of last resort to give construction to a national bankrupt law. It is therefore only by act of Congress that uniformity in enactment and uniformity in construction can be secured.

These are a few of the many reasons which present themselves to my mind for favoring the adoption of such a law and its deliberate

consideration now, in a time of comparative commercial quiet, when the judgment of Congress may be exercised in its provisions in a spirit of deliberation, and for suggesting the matter to the Executive, very respectfully and with diffidence, as a proper matter to call to the attention of Congress. I can not close without especially urging that any such law should be framed so as to accomplish two results, viz.: speed in its administration and the least expense to the parties consistent with its successful operation.

I have examined the Torrey bankrupt bill and approve of it. It seems to me to be plain, effective, and capable of speedy and economical administration.

ADDRESS OF DR. LEONARD J. GORDON,

President of the Board of Trade of Jersey City, New Jersey.

MR. PRESIDENT: On behalf of the Board of Trade of Jersey City, New Jersey, I beg leave to submit some observations in favor of a national bankrupt law.

In a country like the United States, within whose limits is carried on an enormous commercial traffic, anything that secures a merchant against loss, total or partial, or acts as a preventive of fraud in commercial transactions, will so strengthen the feeling of confidence, so essential to extensive business, as to materially contribute to the stability of domestic commerce and the permanent prosperity of the business world.

In the extensive commerce of this country credit is a conspicuous and essential feature. Cash payments are the exception, credit is the rule. A merchant's capacity to do business therefore depends upon the credit and confidence he enjoys in the business world. The stronger his credit the greater his business. Increase of credit therefore is virtually an increase of capital. Thus it follows that whatever tends to strengthen or increase mercantile credit contributes directly to the growth of trade, and so by inevitable sequence to the general prosperity of the people.

Bearing in mind, then, the intimate relations between mercantile confidence and credit and the general welfare I call your attention briefly to one of the conditions in business which tends to impair confidence and hinders the growth of trade. I refer to the incongruous and inadequate insolvency laws of the different States of the Union. Every State has its own policy and system in the treatment of insolvents. Some are strict; some are loose; some practically offer a premium upon fraud; some are crude and inadequate to the exigencies of modern trade. The result is that every merchant whose business extends beyond the confines of his own State is compelled to take risks, the extent of which he is unable to estimate. If his debtor fail, he is compelled to take his chances under the law, perhaps of a distant State, the provisions of which are familiar to the bankrupt, and perhaps have afforded him an opportunity to place his assets beyond the reach of just claims. In another instance the assets of his debtor are whittled down by the expenses and charges incident to their management under a cumbersome and complicated insolvent law. All this is not only exasperating and harassing in business, but it operates directly to lessen the volume of trade.

Again, if we turn from the discussion of the practical difficulties of the present trade conditions, to the consideration of the theory and reason of the case, the need of uniform system in matters of insolvency will be no less apparent. States do not trade with States, but individuals trade with individuals. Individuals of one State trade with merchants of another, nay, of many States. Trade takes no account of State lines or political divisions. It is as boundless as the nation, and is limited only by the national confines of our country. Why, then, should matters vitally interwoven into the life of all trade be left to the shifting, varying, and conflicting policies of different States? Trade is national, and every consideration of logical consistency—the eternal fitness of things—requires that its regulation should be national.

These considerations demonstrate the need of a national bankrupt law. Such a law should be framed so as to embody the following features: (1) It should be practical, concise and comprehensive. (2) It should establish a uniform system of moderate salaries, instead of excessive fees. (3) It should make it impossible for a debtor to be discharged from his legal obligations without a complete disclosure of his condition and a full surrender of his assets. (4) It should forbid preferences, or surround them with such safeguards as to amply protect creditors. (5) It should be drawn so as to secure merchants against fraudulent mortgages, bills of sale, or confidential indebtedness to relatives or friends. (6) It should replace the conflicting and incongruous laws of the different States. (7) It should avoid the delays, unjust charges, and excessive fees of the old bankrupt law. It should, in short, be so framed as to allow proceedings in bankruptcy to be entered and prosecuted with the least possible delay and with a minimum of expense, and secure to the creditor the maximum percentage of his debt.

Such a measure, we believe, is the bill known as “the Torrey bill to establish a uniform system of bankruptcy throughout the United States.” We believe it has been carefully drawn, with intelligent regard to the interests of all merchants, and that it is a practical embodiment of the valuable features of all insolvent laws. If enacted into a law we believe it would decrease failures, stop sacrifice sales, prevent fraudulent transfers and pocket judgments, stop the repudiation of honest debts, protect the honest merchant, assist the unfortunate bankrupt, create confidence, enlarge credit, and contribute materially to the growth and stability of trade.

We trust, therefore, that you may see your way clear to recommend this measure to the attention of Congress at the ensuing session.

ADDRESS OF MR. B. F. JOHNSON, OF RICHMOND, VIRGINIA.

Mr. PRESIDENT: We approach you in behalf of nearly all of the leading business organizations in this country to ask that you will embody in your next annual message to Congress suggestions of approval in regard to the passing of a law which we consider of vital importance to the great business interests of our country.

You, sir, in your professional capacity, have undoubtedly seen the injurious results flowing from defective and conflicting State laws for the collection of debts. These laws, while intended to be beneficial to the debtor class, are in fact frequently injurious to both debtor and cred-

itor; and consequently we feel the necessity of a national law that will protect the business interests of all the citizens of the United States regardless of location.

The last national bankrupt law was cumbersome and expensive, and very properly excited the disgust of those who were hampered by its burdensome and exacting conditions. A large number of our fellow-citizens, smarting under the injustice of that law, were loth to recommend the passage of another national bankrupt law; but as the business of each year is closed up the active business men of this country realize more and more strongly the necessity for a just and equitable national law that will protect alike the honest debtor and creditor.

The representatives of the largest and strongest bodies of business men, irrespective of politics or geographical lines, have met in several national conventions, and are now prepared to lay before Congress and strongly recommend the passage of an equitable law, known as the Torrey bankrupt bill. We can assure you that our wisest and most careful business men have approved this bill, which, if it could be passed substantially in its present shape by Congress, would prove a great boon to our business community; would strengthen confidence and extend and more firmly establish satisfactory business relations between all points of our common country.

We desire a law by which the man residing in Florida or California can do business with the same feeling of confidence and satisfaction in Maine or Texas that he could with business houses in his own State.

It is a well-known fact that in many of the States of our country the collection laws are very defective; that, instead of being a help and a strength to the members of the business community, they are constantly a temptation to the unscrupulous and dishonest to cheat and swindle.

We recognize the fact that human nature is weak at best, and, instead of countenancing or encouraging laws that will produce such an effect, we desire to establish such national laws and encourage the establishment of such State laws as will build men up morally and offer every incentive to them to conduct their business on the highest plane.

The provisions as set forth in this bill are such as to favor the honest and upright man who conducts his business on right principles, and to make it very difficult for those who are so inclined to deceive, cheat, or in any way defraud.

Besides its unwieldy proportions and unsatisfactory features, the old law enabled unscrupulous lawyers and greedy officials to charge exorbitant fees. In some instances the expenses entirely dissipated the whole of small estates.

An examination of this bill to be introduced in Congress will show you that provision has been made to administer every estate in the most careful and economical manner. We feel, sir, that the passage of this law substantially in its present shape would be a triumph in the art of law-making of which this administration might justly be proud. It contains some important clauses and points not set forth in any bill previously considered by Congress.

We fully appreciate the fact that you have many duties of very great importance constantly pressing upon you; but, without egotism, we do think that in the consideration of this question you will find it of greater importance than any that is being agitated at the present day. We trust that after examining fully this bill you can conscientiously recommend it to Congress in such strong terms that the representatives of the people will realize fully the necessity of prompt action, and that

before the coming of the new year we may have this important law enacted, which will so greatly tend to strengthen and promote the general business interests of our country.

We do not wish to tax your time too severely in laying before you at great length the importance of this bill, the urgent necessity of which is doubtless already very apparent to you.

We beg leave to state that we are not pleading for personal interests; but that we come as the representatives of the great business interests of every State in the Union, and they through us utter, as with one voice, the great necessity for a just and equitable national bankrupt law.

As faithful and loyal citizens we trust that you will be divinely guided in the consideration of this, as of every important question, and wish that the blessings of heaven may rest upon you and those who are engaged in making and executing the laws of our land.

ADDRESS OF MR. WILLIAM J. McMANIGAL, OF OHIO.

Mr. PRESIDENT: I represent my own interests as an insolvent, and in speaking for myself am confident that I voice the sentiments of thousands of good citizens in this broad land who will be benefited personally by the enactment of an equitable uniform law. Benefited not to the detriment of anybody, but for their own good and the best interests of the community in which they live.

I was one of the unfortunate victims of the panic of 1873 and 1874. At that time I was somewhat extensively engaged in business in Pennsylvania, and, owing to circumstances which it is unnecessary for me to explain, I lost my entire property, real and personal, including my household goods. I did not claim my exemptions, but simply gave up to my creditors everything I had and was left penniless. My property was greatly sacrificed. At any other time it would have been sufficient to pay my debts, but at that time it was not, and as a result I was rendered insolvent and helpless to pay the balance of my indebtedness.

Soon after being impoverished by that panic I moved to Ohio, and since then have been supporting my family by working upon a salary, and am still so engaged. It is needless to say that the competition among men without means for positions which pay a salary is so great that salaries are not such as to enable a man to support a family and educate his children and at the same time make any headway as against an indebtedness upon which interest is accruing.

I have several times been offered the use of capital and an interest in a profitable business, which I confidently believe would have enabled me to regain my position in the mercantile world and to have saved enough to have eventually paid off my indebtedness; but the fact that this cloud of debt hung over me prevented an acceptance of the very considerate offers made.

I respectfully submit that the creditors of an insolvent man would not be financially harmed by his discharge, because the obligations of such a person are worthless, and if he is honest a discharge would enable him to endeavor, at least, to regain his position and to eventually liquidate his indebtedness. If he were inclined to ignore the obligations of his contracts and to follow the selfish instincts, the obligations are worthless anyhow, and hence I conclude that the discharge of an insolvent is of no practical detriment to the creditor, and that the re-

removal of his embarrassment of indebtedness gives him an opportunity, if he can, to avail himself of the lessons of past errors or to overcome misfortunes and to add to the material wealth of the community in which he lives.

Many of the best men in the country have been unfortunate in the investment of their capital, and as a result have become insolvents; but either by the discharge under the former bankrupt laws or by the voluntary release of creditors have been enabled to prosecute their life work and to again become useful and influential citizens.

I therefore respectfully submit that the wisdom of the discharge of honest insolvents is supported by the experiences of the past, dictates of public policy, and the humane policy of giving to every citizen an opportunity to work out his own destiny, and that the same is not in mitigation of the best interest of the creditor classes.

The Torrey bankrupt bill wisely provides, as I think, for the exemptions to the unfortunate debtor according to the laws of the State in which he lives. It is a part of civilization that the home of the unfortunate should be protected, and it is but embodying the wisdom of past legislation to have retained this provision in this measure.

As the representative of honest insolvents, I rejoice that the criminal provisions of this bill have been so framed as to draw a line between men who have become involved in misfortune without the perpetration of criminal acts and those whose misdeeds are directly responsible for their unfortunate position. It is one of the curses of poverty that those who suffer that affliction as the result of honest misfortunes are placed upon a level with those who have arrived at that position through their own dishonest acts. This measure visits condign punishment upon the latter class, while it grants to the former an honorable discharge and affords an opportunity for their again rising to the position which they are entitled to occupy.

As the self-appointed representative of the unfortunate honest insolvents of this country, who look to this administration and to the coming Congress for relief, I respectfully submit that a law which provides for the discharge of the honest insolvents, makes provisions for the reasonable exemptions for the head of a family, and provides an adequate punishment for dishonest debtors is a law that is satisfactory from our standpoint.

ADDRESS OF MR. EDWARD C. ROGERS,

President of the American Paper Manufacturers' Association of the United States.

MR. PRESIDENT: It gives me great pleasure to come before you at this time in the interest of a great manufacturing industry. I come with representatives from other great commercial bodies to solicit your good offices, and to ask you to recommend to Congress in your forthcoming message the enactment of an equitable bankrupt law. Such a law would be a national blessing, and would bring to the business men of our country a measure of relief which they have sought for these many, many years. Some basis ought to be found where all the States of our Union can rest on common ground and feel that their interests are identical.

The paper manufacturing and jobbing interest of this country has long felt the need of such a law, and gladly will they join hands with

all other commercial interests, to the end that all may be done that can be to bring about such desirable legislation.

From our estimate of your character we know you would favor only what is just and right, and we ask for nothing else.

ADDRESS OF HON. WM. G. WHIPPLE,

Mayor of Little Rock, Arkansas.

Mr. PRESIDENT: While I recognize that there are some serious objections which can be reasonably urged to any bankrupt act, yet I am satisfied that a large majority of the business men in this section of the Union would favor a bankrupt bill substantially like the Torrey bill.

Among the many reasons which might be urged I will dwell upon only one, viz: the equality secured by that measure to all the creditors, the equal distribution of the assets of the estate, with certain classes of proper and worthy exceptions, thus regulated by law.

The practice of preferences which obtains in assignments in my own and other States, and which under the present system of State regulation may be authorized in every State, is almost criminally disastrous to the interests of the general average creditor. He is placed entirely in the power of his insolvent, or at least failing, debtor and left to his uncovenanted mercies. The creditor goes on delivering goods to his debtor, relying on his credit and expecting, and having a right to expect, fair and equitable treatment, having no means of insuring such treatment in case of a break up except through the favorable exercise of the power of the debtor, until the debtor gets ready to quit business, when he suddenly stops, makes an assignment under our law, and therein effectuates such a disposition of his assets as best comports with his sovereign will and pleasure, exercising this power in the form of preferences, which may, and usually do, absorb the entire estate, and leave nothing but blasted hopes to the large majority of the creditors. The debtor selects the favored objects of his bounty, pays them liberally and often in full, and gladdens their hearts. Of course, they are supposed to be honest debtors; sometimes they are not, often their debts are dishonestly swelled and padded, and it is but a poor consolation to the defrauded creditors to be assured that this is illegal, when the true state of the case can be, and so often is, buried beyond all chance of being unearthed.

And while this mockery of justice and fair dealing is going on the honest creditor goes away empty handed. This is not an assignment; it is downright robbery. And this is no fancy sketch, for this is what often actually happens under this State system of preferences, and which under such a system is really unavoidable. Of course, the intention of the law-giver is a good one. In allowing preference he is but copying the common law. But the objection lies to the real and unavoidable operation of such a law.

And there seems to be but one practicable mode of remedying this crying evil, and that is by Federal legislation, to be enforced by the Federal courts. Such legislation will operate over the whole country, be known to all, and bring about the very most desirable consequence when a merchant breaks down, and that is a fair and just apportionment of what property he has left. Such a law would permit a more satisfactory basis on which to do business and extend credit.

The vender would know better what to depend on, and a healthy influence would be brought to bear on the debtor merchant. He would be under less temptation to suspend his efforts to go on, and under a stronger inducement to put forth his every energy to keep on his feet and weather the storm, knowing that in case of failure his relatives, "his cousins and his aunts," could not be so readily protected, but would have to share the fortune of his other creditors.

The result, as is confidently believed, would be fewer failures and greater commercial energy and prosperity.

I have not exhausted this point, but probably have said all I ought to, for your time is precious.

I confine myself to the single point, and leave the many other considerations, perhaps equally cogent, to be urged by others.

BANKRUPTCY.

THREE ADDRESSES

OF

THE AUTHOR OF THE TORREY BANKRUPT BILL.

A CONSIDERATION OF THE PROVISIONS OF THE BILL, AT
THE BANQUET OF THE BOSTON BOOT AND SHOE
CLUB, BOSTON, NOVEMBER 20, 1889.

RESULTS THAT WILL BE OBTAINED BY BANKRUPTCY LEGISLATION, AS
ANTICIPATED AT THE ANNUAL BANQUET OF THE ASSOCIATED
WHOLESALE GROCERS, ST. LOUIS, DECEMBER 30, 18-9.

A NATIONAL BANKRUPT LAW; CONSTITUTIONAL PROVISIONS; FORMER
ACTS; THE POPULAR DEMAND, AND THE BILL AS OUTLINED
BEFORE THE AMERICAN BANKERS' ASSOCIATION,
SARATOGA, N. Y., SEPTEMBER 4, 1890.

A CONSIDERATION

OF THE PROVISIONS OF THE BANKRUPTCY BILL AT THE BANQUET OF
THE BOSTON BOOT AND SHOE CLUB, NOVEMBER 20, 1889.

BY COL. JAY L. TORREY.

The Boston Boot and Shoe Club tendered a banquet at Young's Hotel, Boston, on the 20th of November, 1889, to Col. Jay L. Torrey, of St. Louis, the author of the Torrey bankrupt bill; Hon. George F. Hoar, United States Senator from Massachusetts; Hon. John Lowell, ex-United States circuit judge and author of the Lowell bill; Hon. Patrick A. Collins, ex-Congressman and the chairman of the last National Democratic Convention, and Hon. Henry Cabot Lodge, and Hon. John W. Candler, members of Congress.

Mr. Horace B. Parker, the toastmaster, in a complimentary speech introduced Colonel Torrey, who was greeted with applause, and spoke as follows:

MR. PRESIDENT, GENTLEMEN: I beg to thank you for your very kind reception and to express my appreciation of the honor I enjoy in being your guest.

Mr. President, your considerate words of encouragement and compliment are applicable to my associates as well as to myself. We have labored assiduously, and believe that we will ultimately accomplish the end in view, but the possibility of such a result must be attributed, for the most part, to the earnest men with whom I am associated and the good cause that we together represent rather than to my individual merits or labors.

Four national conventions have been held since the repeal of the law of 1867. All of them have had for their object the securing of the enactment of an equitable bankrupt law. The last convention unanimously adopted a bill and considerately gave it my name. It has since been indorsed by the Associated Wholesale Grocers of St. Louis, the New York Board of Trade and Transportation, the Boston Merchants' Association, the Missouri Bar Association, the National Board of Trade, and other commercial bodies in all parts of the country, and the prospects are that in the near future it will receive the approval of all the commercial bodies in the entire country with the exception of a very few in number which have heretofore been opposed to the enactment of any law upon that subject.

The bill is divided into five chapters, the subjects of which are courts, officers, bankrupts, creditors, and estates. The chapters collectively contain 77 sections and there is a heading or catch-word to each section, which truly indicates its contents.

The United States district courts have original jurisdiction in bankruptcy. Litigation relating to the estate may be conducted in the State court most convenient to the parties litigant.

Controversies may be arbitrated, compromised, or litigated under the direction of the courts of bankruptcy.

But two offices are created by the act, the referee or assistant judge and the trustee or representative of the creditors in the handling of the property of the bankrupt.

The referees are to be appointed by the United States circuit courts. Their salaries will be \$1,000 per annum, and \$10 for each case after it is disposed of, and the records returned to court. They are bonded officers. They are precluded from purchasing directly or indirectly any of the assets of estates. The maximum number of referees is the number of Congressmen from the States. The minimum number is one for each judicial district, and such additional number as shall respectively have at least 50 cases pending before them continuously. Their territorial districts will be assigned to them by the court, and may be changed from time to time. They are authorized to dispatch such business as may be referred to them from time to time by the courts, and in the absence of the judges issue warrants for the arrest of bankrupts and seizure of their property, and to make adjudications in certain cases. All contested matters decided before them may, upon application, be certified into court and there be finally determined. They must furnish to parties in interest information, upon request, concerning estates which are pending before them. The records in each case are kept in separate books, in the same manner that records are now kept in United States courts, and when the cases are concluded, are returned into court and constitute a part of the records of the court.

The trustees are nominated at meetings of creditors and are appointed by the judges. They are to reduce the estates to cash and distribute them in dividends to the creditors as expeditiously as the best interests of the estates will permit. They are to give bonds. The cash in their hands is to be deposited in a bank designated by the courts. The banks must give bonds for the safe keeping of the funds. The trustees are to account for all moneys received, whether as principal or interest. They may be removed for cause and in the event of removal the courts may deprive them of all commissions from the estates. Their compensation is 5 per centum on dividends paid out to the amount of \$5,000, 2 per centum on the next \$5,000, and 1 per centum on all over \$10,000. When there are successive trustees in a single estate but one commission will be paid to all who have acted. Information must be given by those officers to parties in interest upon application concerning estates being administered by them. Their accounts are open to the inspection of creditors. One or three trustees may be nominated for a single estate as the creditors may prefer. If three are nominated, they act by a majority and receive but the single compensation.

The expenses of administering estates must be reported in detail under oath, and shall not be allowed or paid until approved by the court.

A clerk's fee of \$10 shall be paid upon the filing of every petition and shall constitute a payment in full of the clerk's fees for the case.

Estates which pay in dividends over \$5,000 shall pay to the Government 1 per centum of the amount paid out. In case of compositions one-half of 1 per centum on the amount shall be paid to the Government.

Acts of bankruptcy, in brief, consist of concealment to avoid arrest, or the service of civil process; concealment of property to avoid its being levied upon; departure or absence with intent to defraud creditors; failure for 30 days to secure the release of property levied upon; a conveyance of property with intent to defraud creditors; a declaration of insolvency; an assignment for the benefit of creditors; procuring the entry of a judgment to defraud creditors; the return of an execution unsatisfied; suspension of the payment of commercial paper for 30 days; giving a preference while insolvent, or the speculation in options while insolvent.

Compositions may be offered before or after being adjudged a bank-

rupt, but not until there has been filed in court a schedule of assets and a list of creditors and until the debtor has been examined in open court or at a meeting of his creditors concerning the reasons for his failure, the amount and whereabouts of his assets, and his transactions with creditors and others for the preceding 6 months. If the offer is for 50 per centum or more it may be considered, after a majority of the creditors in number and amount have accepted it in writing and the amount to be paid or securities to be given have been brought into court. If the offer is for less than 50 per centum, at least three-fourths in number and amount of the creditors must accept in writing and the money or securities to be paid must be delivered to the court before the composition will be considered. When the conditions precedent to the consideration of a compromise have been complied with, the court will cause all creditors to be notified, and thereafter at a designated time will consider the proposition, and if it is for the best interests of all the creditors, and the bankrupt has not been guilty of an act which would bar his discharge, will confirm the composition. Compositions will be set aside within 6 months after being confirmed if it transpires that they were secured by fraud.

A discharge must be applied for after 2 and within 6 months after adjudication. If the bankrupt can convince the judge that he was unavoidably prevented from applying for his discharge within that time it may be applied for within the next 6 months, but can not be applied for after the expiration of that time; that is to say, 12 months after the adjudication. A discharge will not be granted if the bankrupt was a merchant, manufacturer, or trader, whose annual transactions exceeded \$5,000 and failed to keep proper books of account from which his true condition might be known, committed any felony, committed perjury, failed to act in good faith concerning the administration of his estate, made a preference which has not been surrendered, made a false statement concerning his affairs, conspired to defeat the operations of the act, made a fraudulent transfer of his property, or neglected, without satisfactory excuse, any duty as a bankrupt. A discharge may be set aside within 2 years after being granted, if it transpires that the same was fraudulently obtained.

The exemptions of the bankrupt are such as are provided by the laws of the State in which he lives at the time of filing the petition.

Claims which have been proven in bankruptcy become judgments in the event the bankrupt is not discharged, and execution may be issued thereon in the same manner as upon judgments of courts after trial, hearing, and verdict.

The criminal provisions of the bill are very severe upon defaulting officers, fraudulent bankrupts, and dishonest creditors. The maximum punishment is a \$5,000 fine and 3 years in the penitentiary at hard labor.

The first meeting of creditors is to be held after 10 and within 30 days after the adjudication at a place most convenient to the parties in interest. Subsequent meetings will be held as occasion may require. They may be held upon notice or upon written consent of the creditors. There will be a final meeting of the creditors when the estate has been administered and is ready to be wound up.

Notices will be sent to creditors of each step in the proceedings of administration of the estate, and at all times they will have an opportunity to be heard as to the advisability of proposed proceedings.

Claims are to be proven by the oath of the creditor or his representative; unless contested they will be allowed, as a matter of course, upon being filed.

Preferences are forbidden, and if given, the property or its value may be recovered by the trustee. If excessive fees have been paid to attorneys by the bankrupt, the sum in excess of a reasonable amount may be recovered.

Securities held must be reduced to cash or the values thereof determined by agreement, arbitration, compromise, or litigation, and the amount credited upon claims before they can be proven.

Liens given for a present consideration and in good faith are upheld. Such as are given for the securing of preferences are forbidden and declared void.

The entire machinery of the bill is designed with particular reference to expediting business, *e. g.*, the clerk is paid upon the filing of the petition the entire amount that he is to receive for his services in the case. The referee is paid his fee per case only after it has been concluded and the records thereof have been returned to court. The trustee receives his per centum only upon dividends paid out. It is therefore manifestly to the interest of each of these officers to expedite the transaction of the administration of the estates in which they are interested.

The greatest economy will be practiced in the administration of the law. It is possible that the estate of a voluntary bankrupt may be administered upon the payment of the ten-dollar filing fee and the amount required for the publication of the notice.

In general, there are no unnecessary proceedings. Records are not duplicated. Fees are not multiplied. Officers are interested in expediting the administration of estates. Creditors are not inconvenienced, and are put to as little expense as possible. Deceit, chicanery, and sharp practice are prohibited. There is not the slightest opportunity for extravagance or jobbery of any kind. The bill is designed to enable honest men to do business upon an honorable basis and to put dishonest men in the penitentiaries. [Great applause.]

In the preparation of the bill we have earnestly endeavored to have every sentence in it clear and concise, to have the meaning thereof perfectly apparent upon a single reading, and have endeavored to prevent its being clouded or modified by other provisions of the bill. Where language has been used a second time, as for example, in the section enumerating the acts of bankruptcy, the section providing under what circumstances a discharge can be granted, and in the criminal provisions of the bill, the phrases used are identically the same, to the end that the construction of one would be the construction of the others, and to avoid, so far as possible, the confusion incident to an endeavor to convey the same idea by different language.

We are delighted and surprised by the unanimity of sentiment that seems to prevail throughout the country in behalf of the measure. We have received several hundred clippings from newspapers all over the country, and in every instance they seem favorable to the cause and in all respects, except two, favorable to our particular bill. One of the papers referred to it as identical to the old law, and suggested that a new law ought to be drafted. The editor has since read the document, and now urges the Senators and Representatives from his State to support it. The other expressed the opinion that a better bill than ours has been drafted. This is probably the most encouraging indorsement that any bill of similar importance has ever received. It leads us to hope that we will be able to secure the passage of the bill by the Fifty-first Congress.

The bill was, on the 18th instant, laid before the President of the United States by the Presidential Committee, of which Col. James O. Broadhead, of Missouri, an ex president of the American Bar Association and of the National Bar Association, is chairman. A series of able addresses by the chairman and members of that committee were delivered to the President, and in reply he delivered a short address, in which he referred to the desirability of the enactment of a permanent law upon that subject, instead of one designed simply to clear away wrecks after a catastrophe. It is not expected, of course, that he will recommend a particular measure, but it is earnestly hoped that he will call the attention of Congress to the fact that the members of the commercial world are, with a single voice, demanding legislation upon that subject.

The bankrupt law enacted in 1867 was a failure, not because the principles involved therein were of themselves wrong, but because it was not, in many instances, honestly administered, and under it wrongs were perpetrated which would not have been possible had the principles been accurately stated and properly protected. The pernicious fee system, which came gradually into vogue and assumed such proportions as to absorb estates, rendered the law unavailing and it was therefore repealed. This unfortunate ending of a law, which should have been properly amended instead of wrongfully amended, has made it difficult to secure the enactment of a new law.

Primarily a bankrupt law makes provision for taking possession of and distributing to the creditors the estates of insolvents and dishonest men, and then discharges, or withholds a discharge, from the bankrupt, conditioned upon whether he is an honest or a dishonest man.

There ought not to be objection, from the standpoint of an honest man, whether he be a debtor or a creditor, to having the estate of an insolvent man taken and divided between the persons entitled to it, because the obligation of such person was to pay, dollar for dollar, for the property which was acquired and which became part of the estate, and since his management or mismanagement has been such as to make a compliance with his contract impossible, it is but just that his creditors should be satisfied *pro rata* to the end that they shall not incur a greater loss. The same reasoning applies with greater force to the man who has agreed to pay for the property which has become a part of his estate, but who has been guilty of dishonesty which is likely to result in the dissipation of his estate.

I know of but two classes who are opposed to the foregoing view. They are, first, the men who believe, or seem to believe, as a pretext for opposition to the enactment of such a law, that it is not worth while to undertake further legislation upon the subject because the last law was a failure. Our friends say in reply, that it is the history of all laws that approximate perfection is only arrived at by experience, and the fact that the old law resulted in the enrichment of officers, rather than financial gain to the creditors, does not in the slightest degree affect or modify the business necessities for a carefully drawn measure which shall amply protect the interests of the debtor, and secure the rights of the creditor promptly and economically. We believe that our measure answers the demands of the honest men interested in the subject. We have the courage of our convictions and unbounded confidence that Congress will enact our bill. The second class is composed of influential corporations and firms who prefer to rely upon the principle that "might makes right" rather than the principle that "equality is equity." We beg to express our opinion to this class that it is not

profitable to them as a business proposition, and to respectfully suggest that the principle they invoke is one that is alike dangerous to the individual, to them in their business capacity, and to the body politic at large.

It is therefore respectfully submitted that neither of the grounds of opposition are tenable, and that the gentlemen who oppose the adoption of such a law ought to be in favor of its early enactment.

The fact that the several States have enacted insolvency laws is an unanswerable argument in behalf of the necessity of such laws. The fact that the right to abrogate the obligation of contracts and to pass uniform laws upon the subject of bankruptcy was reserved by the Constitution of the United States to Congress, prevents the several States from enacting complete laws upon the subject of insolvency. It therefore follows that the members of the commercial world can not secure efficient legislation except by Congress.

The proposition to discharge an honest bankrupt who has surrendered his assets for the benefit of his creditors, is supported by sound public policy, by the dictates of human sympathy for the unfortunate, and is, in my judgment, not in derogation of the practical rights of the creditor.

Sound public policy requires that every citizen should have a free and unrestricted opportunity to add to the wealth of the community to his full capacity. The one who has failed in business will have learned an invaluable lesson, either one of his want of capabilities, or one of how to avoid the errors which occasioned his failure. As a citizen he should be unrestricted as to what vocation in life he shall pursue. He ought to be, by his experience, a more valuable citizen and should be at liberty to prosecute such calling and in such way as will best serve his need of providing for his family and adding to the aggregate accumulation of wealth. If he is an honest man he ought to be discharged from the obligation to the end that he may be, if he can, a proprietor, instead of a salaried clerk. If he is held down by the burden of debt he is ordinarily forced into competition with the great army of day laborers and salaried workers and it is not possible that he can make any considerable payment of obligations and at the same time provide for the education and maintenance of the average family. If the purpose of the creditor in preventing the discharge is to secure the payment of the amounts due, I respectfully submit that it is unavailing. In an extended practice of the profession of law, covering a period of 15 years, I have never known of a man who has been able to pay off a large indebtedness out of such returns as could be secured in any clerical capacity. I have known of a number of instances in which honest men, who have been discharged from their obligations as bankrupts, have succeeded in recovering their position and in accumulating a sufficient amount of money by fortunate speculation to enable them to pay their debts, principal and interest, to their own delight and the gratification of their creditors.

My conclusion, therefore, is, that claims against insolvents, whose estates have been distributed in part to their creditors are worthless, and that the cancellation of them is no practical loss to the creditor, but, on the contrary, is advantageous to the individual debtor and to the community at large.

The struggle for the securing of preferences is pernicious, both as to the debtor and the creditor. I have known of frequent instances in which a nervous creditor began the exercise of a surveillance over the affairs of a suspected debtor, with the result of destroying his

confidence in the possibility of success and in alarming other creditors, and which in the end resulted in a man who was in effect solvent, and who under ordinary circumstances would have been able to continue in business, being totally annihilated in a financial sense simply by the watchful care incident to the possibility of securing preferences. I respectfully submit that the enactment of our law will have a conservative influence upon the course of creditors as against their debtors, and will provide an adequate remedy in the event of actual insolvency or wrong and prevent many men from being forced unnecessarily into bankruptcy.

We know that our cause is just, believe that it is the most important measure before the next Congress, have unbounded confidence in our ability to so present the matter as to secure favorable consideration, and are therefore prepared to continue the campaign until the title "Torrey bill" shall be superseded by one that is protected by a flag, backed by an army and navy, and which will in all respects command the respect of civilized people, that is, *a law of the United States*. [Applause.]

I hope and believe that the working of the law when enacted may prove a justification of your enthusiasm on this occasion. [Applause.]

RESULTS THAT WILL BE OBTAINED

BY BANKRUPTCY LEGISLATION, AS ANTICIPATED AT THE ANNUAL BANQUET OF THE ASSOCIATED WHOLESALE GROCERS OF ST. LOUIS, ON DECEMBER 30, 1889.

THE TWELFTH TOAST: ASSOCIATION ENTERPRISE.

RESPONSE BY COL. JAY L. TORREY.

. Mr. PRESIDENT AND GENTLEMEN: The subject of enterprises is interesting, because it is hopeful; it is agreeable to speak of, because it involves a consideration of new and novel ideas. The promotion of enterprise is a work of progress, and promises rewards both in glory and accumulation.

This theme is particularly interesting in connection with this organization, because of the splendid achievements it has accomplished in the past and the promise which the future offers for carrying forward undertakings that will benefit, not its members alone, but also the community at large, and which will add to the material prosperity of the times in which we live.

The history of bodies, such as yours, usually conforms to the history of the individual man, manifesting, as a rule, the three stages of inefficient youth, buoyant manhood and decrepit old age. In this organization the rule finds its exception. At the first meeting of the men who were its organizers, it at once assumed all the vigor and strength of manhood. Up to date there are no indications that the organization will ever reach decrepit old age. I assert with confidence that so long as there is good-fellowship to be enjoyed, new business problems to be solved, and fresh enterprises to be advanced, this body will remain in the vigor and strength of manhood. It may be that as time passes the locks of the patriarchs will whiten, and that the burdens of the day will be borne by hands less calloused than theirs with labor, but for all time the influence of the trio of presidents, Messrs. Peter Nicholson, Joseph W. Goddard, and William E. Schweppe will be felt, their examples imitated, and the work that they have undertaken carried on. [Applause.]

Many, many works of enterprise have been initiated, prosecuted, and aided during the five short years of its organized existence. Among them I name the establishment and successful operation of the credit system; the reduction of freight rates from the seaboard; the arraignment of the railroads before the Interstate Commission; the modification of the contract system of selling certain classes of goods; the establishment of the Interstate Grocer; and your present movement to secure the enactment of a national bankrupt law. [Applause.]

Within a single year, and as the outgrowth of the banquet of last December, a national body has been organized which, in the interest of commerce, has formulated and recommended to Congress for enactment the Torrey bankrupt bill. The measure has been introduced in the House of Representatives and in the Senate, and the indications are that when we assemble a year from to-night your representative will be able to rehearse the details of the agitation which culminated in the bill becoming a law.

A bankrupt law was enacted as early as the years 1542-'43, in the thirty-fourth and thirty-fifth years of the reign of Henry VIII. This was strictly a proceeding in equity. The marginal note is in these words:

The chancellor, treasurer, etc., shall take order with bankrupts' bodies, lands, and goods for the payment of their debts.

The preamble of this act expresses, in quaint language, the causes which led to its enactment. It says:

Whereas divers and sundry persons craftily obtaining into their hands great substance of other men's goods do suddenly flee to parts unknown [something familiar about that. Laughter and applause] or keep their houses, not minding to pay or restore to any, their creditors, their debts and dues, but at their own wills and pleasures consume the substance obtained by craft of other men for their own pleasure and delicate living, against all reason, equity, and good conscience: Be it therefore enacted, etc. (5 Stat. at L., p. 132.)

By this act power was given to the Lord Chancellor and other officers of the crown, not only to take the body, lands, and goods of the bankrupt, but also to attach his debts and property of other kinds in the hands of other persons. If any aggrieved party should make complaint—

Knowing, specifying, or suspecting any of the "goods or debts of such offender to be in custody, use, occupying, keeping, or possession of any person, or that any person is so indebted to such offender," then the chancellor and other persons had power to "send for and *convent afore* them by such process, ways, or means as they should think convenient" the suspected persons and examine them in such ways and by such means "as the said lords by their discretions shall think meet and convenient, for and upon the specialty, certainty, true declaration, and knowledge" of such debts or goods being in their possession. If such person "upon such examination do not disclose, plainly declare and show the whole truth of such things as he or they shall be examined on," such persons forfeited double the value of the goods, etc., received or concealed by them, and the amount so forfeited was distributed among the creditors of the bankrupt *pro rata*.

The provisions against proving fictitious debts against the bankrupt's estate are in the following language:

If after such person or persons shall keep his or their houses or flee to parts unknown, as is aforesaid, any person or persons do fraudulently, by covin or collusion, claim or demand any debt, duty, or other thing by writing or otherwise, of any such offender or offenders, other than such as he or they can and do prove to be due by right and conscience in form aforesaid, and the same to proceed *bona fide* without fraud or covin, then every such person or persons so craftily demanding or claiming any such debt, duty, or other thing as is aforesaid shall forfeit and lose double as much as he or they shall so claim or demand.

If the bankrupt shall have "deceitfully, by covin or collusion, suffered or caused any other person or persons to recover against him or them any debts, goods, chattels, wares, or merchandises without just cause and title so to do, proceeding *bona fide* without fraud or covin," such goods so fraudulently recovered were to be delivered up to the just creditors of the bankrupt, and the fraudulent recovery can not be enforced against the bankrupt so long as there were any just debts unpaid. But after all the just debts should be paid then the party holding the fraudulent judgment could enforce it against the bankrupt, the language of the act being—

And nevertheless after that the said true debts and duties shall be fully satisfied and paid as is aforesaid, as well the body of the said offender as his lands, tenements, goods, and chattels shall be charged and liable to the execution of the said recovery (that is the fraudulent recovery) according to the tenor, force, and effect of the same.

If the bankrupt left the country, proclamation was made that he return within three months, and that—

If the said person within three months next after he shall have knowledge of such proclamation, or as soon after as he conveniently may, do not repair and yield his body as is aforesaid, that then the body of all and every such offender shall be judged, taken, and deemed to all intents and purposes out of the king's protection.

And all his property was to be distributed equally *pro rata* among his creditors.

Any third person who should "willingly help to aid, embezzle, or convey any such person or persons out of the realm and without the king's domain into any foreign realm or place, knowing the said person or persons to depart or withdraw themselves or convey their said goods, etc., for the cause and intents aforesaid" should suffer such punishment as the said lords should deem meet.

The act provided for equal distribution of the bankrupt's property, but expressly precluded the bankrupt from any discharge from his debts.

It seems, notwithstanding this act of Henry VIII, which made bankruptcy proceedings merely proceedings in equity, bankrupts increased, and need of a more stringent law was felt, for the act of 13 Elizabeth commences with this preamble:

Forasmuch as notwithstanding the statute made against bankrupts in the 14th year of our late sovereign lord, King Henry VIII, those kind of persons have and do still increase in great and excessive numbers, and are like more to do if some better provision be not made for the repression of them and for a plain declaration to be made and set forth who is and ought to be taken and deemed for a bankrupt; therefore be it enacted, etc.

The grounds of bankruptcy are then set forth as follows:

If any merchant or other person using or exercising the trade of merchandising, by way of bargaining, exchange, rechange, bartry, chevisance, or otherwise in gross or by retail; or seeking his or her trade or living by buying and selling; being subject born of this realm or any of the queen's dominions or denizen; sithence the first of the present Parliament, or at any time hereafter, shall depart the realm, or begin to keep his or her house or houses, or otherwise absent himself or herself; or take sanctuary; or suffer himself or herself willingly to be arrested for any debt or other thing grown or due for money delivered, ware sold, or any just or lawful cause or good consideration or purposes; hath or will suffer himself or herself to be outlawed, or yield him or herself to prison, or depart from his or her dwelling house or houses; or intend or purpose to depart or hinder his or her creditors.

In the fifth year of the reign of George I (1729) another act was passed which was extended by the act of 15 George II. This latter act contained some severe provisions. It seems that commissions had been issued against a number of persons who were bankrupts within the meaning of the act of George I, but who claimed that the writs were without force or effect against them because the act had expired. The act of George II, after reciting this fact in the preamble and also reciting that—

Whereas many persons have and do daily become bankrupts, not so much by reason of losses and inevitable misfortunes as to the intent to oblige their creditors to accept such their unjust proffers and composition and to defraud and hinder their creditors of their just debts;

selves within forty-two days after notice published in the *London Gazette* it went on to provide that if such persons did not surrender themselves and did not thereafter conform to the statutes they should be deemed guilty of a felony. This act, as well as that of George I, provided for an allowance to the bankrupt and for his discharge, and these were the first acts which provided in any way for the release of the bankrupt from his debts.

Other acts were passed from time to time. The last one was in 1883 and is now in force.

In the United States a bankrupt law has been in force from 1800 to 1801; another from 1841 to 1843; and the last from 1867 to 1878.

Large numbers of men, prominent by their business ability and who take a deep interest in the commercial well being of the country, have taken part in this agitation in behalf of a national bankrupt law for many good reasons.

It is apparent to the most casual observer that the insolvency laws of the separate States ought to be superseded by one harmonious, uniform national law. Under the Federal Constitution it is not possible for any State to discharge a bankrupt from debts due creditors in other States. He must still remain liable for the excess of his debts over the amount paid by his estate in dividends, since the States are forbidden to pass laws impairing the obligation of contracts. Congress alone can meet the demand for an equitable, uniform law.

Commercial credit will be promoted by the law which has been recommended by the national convention. It will give confidence to the men who handle the commerce of the country, and in so doing will enlarge the credit of every man engaged in trade and thereby increase the purchasing power of money.

The insolvents will be divided in two classes, honest and dishonest; the former will be discharged from their indebtedness, but not the latter.

The estates of persons who cannot or will not pay their debts will be taken charge of by and be distributed among the creditors.

The measure will give stability to financial transactions by engendering confidence and by doing away with the uncertainties which beget suspicion and breed trouble.

This measure will furnish a safe and equitable guide for the settlement of transactions which are now left unsettled by the varying rules of law in more than forty States.

Dishonest men will be prevented from outdoing their honest competitors by chicanery and fraud and in turn swindling their creditors.

Large concerns will be prevented from securing an assignment for their benefit from small debtors, and thereby collecting dollar for dollar of their indebtedness, while other creditors, of the same class, are prevented from collecting any part of their dues.

The unfair appropriation of assets through the instrumentality of judgments by confession and attachments by connivance can be set aside by honest creditors.

The estates of insolvents will be protected from the depredations of persons holding fraudulent claims.

Creditors will have ample opportunities to investigate the transactions of their debtors and to secure such part of the assets as they may be entitled to equitably.

The bankrupt and other persons may be examined under oath as to the whereabouts of assets and concerning all matters pertaining to the administration of the estate.

The prompt compromise by arbitration of controversies at small expense will be promoted as a substitute for prolonged, vexatious and expensive litigation.

Officers in charge of the estate of insolvents who embezzle, fraudulently appropriate, expend, or transfer such assets will be punished by fine and imprisonment.

This law will prevent the purchase of goods by persons who do not intend to pay for them.

Persons will be punished who obtain, on credit, goods from one person in order to pay their debts due to another.

Men who are in business, and who have obtained goods on credit, which have not been paid for, will be punished if they pledge, pawn, or dispose of such goods otherwise than in the ordinary course of business.

The secreting, concealing, removing, mutilating, or falsifying of books, deeds, writings, or documents relating to property, is declared to be a crime and will be punished by imprisonment.

Insolvents are forbidden to attempt to account for missing property by fictitious losses or expense.

A bankrupt will be imprisoned who conceals from his trustee any of the property belonging to his estate.

Heretofore dishonest men have so far imposed upon the confidence of the better classes; have so frequently taken advantage of the ineffectiveness of State laws by committing commercial wrongs; have engendered so much suspicion between the business men of different sections, that those who entertain the purpose of dealing fairly and living acceptably have, with one accord, demanded the legislation embodied in this measure at the hands of Congress.

The work thus far accomplished has been attended with great expense and is everywhere recognized as purely unselfish.

I am told that objection will be made to the enactment of a national uniform law by the lawyers in Congress who reside at a distance from the place of sitting of a United States court and who fear that by the enactment of such a law their business will be interfered with. The fear is not well founded. In the first place the law will give a conservative tone to the demands of creditors and, as a result, there will not be the same precipitate action that is now experienced. Under the present system the creditor, on the one hand, is suspicious that other creditors will attach the debtor, or that the debtor will make an assignment with preferences, and as a result is only too ready himself to attach. On the other hand, when the debtor realizes that preferences are out of the question and that an attachment will not prevail, or, at least, that bankruptcy proceedings may be instituted and thus render nugatory the advantage sought to be attained by an attachment, he will be more independent and cherish a greater degree of hope that he can pull through what may only be a temporary stringency. The result will be that commercial collections of the better class will increase rather than diminish. In the second place the law provides that the territorial jurisdiction of the several United States courts shall be divided, and that a referee shall be assigned to such territory, and that hearings may be had at the time and place most convenient to the parties in interest. More important still, controversies affecting the property of the estate may be litigated in the State courts and in the counties where the parties reside. I therefore conclude that the lawyers will be benefited instead of injured. Still, if it were true that the enactment of the law would decrease the collection business, I submit that this fact ought not to be urged against the desired legislation, since the credit of every client of every lawyer in the country will be strengthened and promoted and the good thus caused should outweigh the objection above stated.

There is every reason for confidence that the verdict of Congress will be in favor of a national law, in support of a national commerce, and

that the law which is the product of your enterprise will be the one selected as best calculated to answer the necessity.

You have occasion to be proud of your work thus far and to be satisfied with the outlook for the enactment of the bill. I confidently believe that ere long the people as a whole will be proud of the law and satisfied with its administration. [Applause.]

Through this agitation you, as the Associated Wholesale Grocers, have become known in every town and hamlet in the United States, to the members of Congress, and to the officials of the Government.

More good will be accomplished than has been anticipated if the national movement which you have inaugurated on the part of the commercial bodies is hereafter imitated where there is a national need to be supplied or a national wrong to be corrected.

The combined effort of the good men banded together in commercial bodies may not succeed in exterminating tendencies to do wrong on the part of individuals, but it will exercise a powerful influence against the commission of wrongful acts and in securing the swift and adequate punishment of wrongdoers. I sincerely hope that the time has come when united effort will be made for our individual good, for our collective good, and for the good of our Government. [Applause.]

A NATIONAL BANKRUPT LAW.

ADDRESS OF COL. JAY L. TORREY BEFORE THE AMERICAN BANKERS' ASSOCIATION,
SARATOGA, SEPTEMBER 4, 1890.

Mr. President and Gentlemen: I shall speak to you upon the subject of a national bankrupt law under headings as follows: (1) The provisions of the Constitution relating to bankruptcy; (2) the laws of 1800, 1841, and 1867; (3) the present popular demand for the enactment of a bankrupt law; and (4) the Torrey bankrupt bill—(a) the form of the bill; (b) the courts and officers; (c) voluntary and involuntary bankruptcy; (d) acts of bankruptcy; (e) compositions; (f) liens; (g) the bankrupt's exemptions; (h) safeguards against the fraudulent concealment of property; (i) the penalties prescribed for wrongdoers; (j) the discharge of honest insolvents, and (k) economy and expedition in the administration of bankrupt estates.

(1) THE PROVISIONS OF THE CONSTITUTION RELATING TO BANKRUPTCY.

Mr. James Madison, in the introduction to the Madison State Papers, refers to the necessity for a provision in the Constitution upon the subject of bankruptcy as follows:

Among the defects which had been seriously felt was a want of uniformity in cases requiring it, as laws of naturalization and bankruptcy, a coercive authority operating on individuals, and a guaranty of the internal tranquillity of the States.

When Article 16 of the Constitution was presented requiring that full faith and credit should be given to the acts of the legislatures and to judicial proceedings of each State Mr. Charles Pinckney, of South Carolina, moved to commit the article with the following proposition:

To establish uniform laws upon the subject of bankruptcies and respecting the damage arising on the protest of foreign bills of exchange.

Mr. Gorham was for agreeing to the article and committing the proposition. Mr. Madison was for committing both.

On the question for committing article 16, with Mr. Pinckney's motion, representatives of the States voted as follows:

Connecticut, New York, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, and Georgia, aye (9). New Hampshire and Massachusetts, no (2).

Mr. Rutledge, from the committee to whom were referred sundry propositions together with Article 16, reported that additions be made to the report as follows: After the word "States," in the last line on the margin of the third page, add "to establish uniform laws upon the subject of bankruptcies."

When the clause in the report "to establish uniform laws upon the subject of bankruptcies" was taken up Mr. Roger Sherman observed that "bankruptcies were in some cases punishable with death, by the law of England, and he did not choose to grant a power by which that might be done here."

Mr. Gouverneur Morris said that this was an extensive and delicate subject; he would agree to it because he saw "no danger of abuse of the power by the Legislature of the United States."

On the question of agreeing to the clause, Connecticut alone voted in the negative.

The Committee on Style, etc., composed of Mr. Johnston, Mr. Hamilton, Mr. G. Morris, Mr. Madison, and Mr. King of the convention, divided the subject, and by its chairman reported the section as we now have it with the exception of a change of "an" for "a" as follows:

To establish an uniform rule of naturalization and uniform laws upon the subject of bankruptcies throughout the United States.

A very careful examination of Elliott's State Convention and Debates on the Federal Constitution, Story on the Constitution, Rawle on the Constitution, and the Constitutional Convention by Jameson fails to disclose any opposition to the granting to Congress the exclusive power to legislate upon the subject, either by the members of the convention or of the State legislatures, when submitted for ratification.

The wisdom of vesting the power in the Congress of the United States to enact uniform laws upon the subject of bankruptcies is apparent to the most casual student of governmental philosophy. Our forefathers doubtless foresaw that interstate commerce would assume great proportions as the nation progressed in its career, and realized that State laws upon the subject must of necessity prove inadequate to meet the demands of commerce.

(2) THE LAWS OF 1800, 1841, AND 1867.

Congress has exercised the power of enacting bankrupt laws but three times since the adoption of the Constitution. The first law was enacted in 1800 and was repealed a year later; the second was enacted in 1841 and was repealed during the second year thereafter; the last act was passed in 1867 and remained a statute 11 years. Each of the three laws mentioned was enacted to meet an emergency, and was repealed as soon as its purpose had been accomplished.

(3) THE PRESENT POPULAR DEMAND FOR THE ENACTMENT OF A BANKRUPT LAW.

The demand of the people for bankruptcy legislation at this time is not local nor from a particular class, but comes from all parts of the Union and from all classes of citizens.

There have been held four national conventions since the repeal of the bankruptcy law of 1867, and each of them has had for its sole object the securing of the enactment by Congress of a bankruptcy law which should grant relief to honest insolvents and be an impartial protection to the business interests of the whole country. The first and second of these conventions were held in Washington City in 1881 and 1884, respectively. The third was held in St. Louis during the spring of last year and the last one was held at Minneapolis last September.

Commercial bodies in all parts of the country have passed memorials and resolutions and citizens have signed petitions favoring the enactment of a bankrupt law, and representatives of those bodies have organized a national body for the sole purpose of securing bankruptcy legislation.

The bodies which have taken action in favor of the passage of the bankrupt law and the individuals who are members of the organization which has been formed to promote the agitation are summarized by States and Territories as follows:

[Revised February 27, 1891.]

	Bodies and petitions.	Officers and commit- teemen.		Bodies and petitions.	Officers and commit- teemen.
Alabama	1	7	Nebraska	18	3
Arkansas	9	8	Nevada	1	0
California	9	5	New Hampshire	3	0
Colorado	7	4	New Jersey	5	3
Connecticut	7	1	New Mexico	1	1
Delaware	1	1	New York	54	18
District of Columbia	2	0	North Carolina	4	2
Florida	3	3	North Dakota	2	3
Georgia	5	6	Ohio	40	25
Idaho	2	1	Oregon	8	4
Illinois	81	29	Pennsylvania	35	13
Indiana	11	7	Rhode Island	4	2
Indian Territory	1	0	South Carolina	2	2
Iowa	15	10	South Dakota	2	3
Kansas	15	4	Tennessee	10	4
Kentucky	6	12	Texas	28	8
Louisiana	11	10	Utah	0	1
Maine	10	1	Vermont	1	2
Maryland	5	4	Virginia	6	2
Massachusetts	50	11	Washington	3	1
Michigan	27	12	West Virginia	5	3
Minnesota	28	17	Wisconsin	15	9
Mississippi	7	5	Wyoming	1	0
Missouri	58	31			
Montana	1	1	Totals	619	299

The appeal to Congress for the enactment of this law occurs at a time of comparative calm and should be heeded, and a law should now be passed because at this time it is probable that the action of Congress will be a wise interpretation of the needs of all the people. If action should be delayed, it may unfortunately be the case that the national legislative body will be called upon to act in response to the selfish demand of a particular class who may need relief from the burdens of indebtedness brought about, not by their own inability, but by a public panic. There does not seem to be any reason at this time why a bill can not be passed which is just in all its provisions to the debtors, the creditors, and the Government.

The merchants of the country, in so far as they purchase commodities upon time are debtors, and in so far as they sell commodities upon time are creditors, and for the most part constitute the debtor and creditor classes of the country; in their dual capacity of debtors and creditors, they are interested in holding the scales evenly between these two classes. As they are taking the chief part in the agitation designed to secure the enactment of this measure, it goes without saying that strenuous efforts have been made in behalf of the formulation and presentation of a perfectly fair law.

If Congress had, upon its organization, passed an acceptable uniform bankrupt law, and from time to time amended it, to meet the ever progressive conditions of commerce, not a single one of the State insolvent laws would have ever have been formulated or enacted.

The State legislatures have enacted bankruptcy or insolvency laws because the people demanded them, and the Congress of the United States would not heed their demands. The State legislatures could not

enact complete laws, because of the restrictions in the Federal Constitution as to the obligation of contracts, and because of the reservation to Congress, in explicit terms, of the power to enact such laws. The States are not to be censured, but commended, in coming to the relief of their citizens so far as they can.

The laws enacted by the States are each, of necessity, defective, and in the aggregate they are incongruous and contradictory. To the practitioner they are productive of a large income; to the wearer of judicial ermine their enforcement involves intellectual gymnastics, and to the business man they are of great annoyance and expense. The very existence of insolvency laws, as a part of the codes of the several States, is a solemn protest against the policy of inaction on the part of Congress, and constitutes an unanswerable argument in favor of the enactment of a uniform bankrupt law.

Congress is derelict in the exercise of but a single power reserved to it by the Constitution, and that is the power to enact uniform laws upon the subject of bankruptcies. *The people have demanded* that this power shall be exercised, and they confidently anticipate that the demand will be complied with by the present Congress.

(4) THE TORREY BANKRUPT BILL.

(a) *The form of the bill.*

The bill as originally drafted and as passed by the House of Representatives is analytically arranged by being divided into five chapters and the chapters into sections. Each chapter is devoted to a subject and each section to an idea. Every section has a catch-word or title expressive of what it contains. (*See birds-eye index at the close of this address.*)

(b) *The courts and officers.*

The district courts of the United States have original jurisdiction in bankruptcy proceedings.

The section of the bill relating to suits against bankrupts' estates and those brought by trustees to enforce the rights of bankrupts' estates as reported by the Committee on the Judiciary of the Senate is as follows:

Suits by the trustee shall be brought in the courts where the bankrupt might have brought the same if he had been entitled to recover therein. Suits to recover property in the possession of the trustee, including suits for the foreclosure of mortgages upon real estate, shall be brought in the court having jurisdiction thereof if they had been brought against the bankrupt. Suits for the establishment of liens against the personal property of the bankrupt, or the fund in the possession of the trustee, shall be brought in the district court of the United States where the proceedings in bankruptcy are pending.

The offices created are but two. They are the referee, or assistant judge, and the trustee to represent the creditor.

The referee is to be appointed in the States by the United States circuit courts at a time when there are two judges upon the bench, one of whom is the district judge, and in the Territories and the District of Columbia by the supreme courts. He may be removed by the same tribunal for cause, or because his services are not needed, or by reason of the fact that the number of cases pending before him has fallen to below fifty. This officer is not to be related within the third degree of consanguinity or by marriage to the judge. He will be paid by the Gov-

ernment a salary of not to exceed \$1,000 and \$10 per case administered before him, when actually concluded, and his actual and necessary office expenses.

The trustee will be appointed by the creditors and perform his duties under the direction of the court. He will give bonds. All moneys must be deposited in a designated depository, and all amounts must be paid out by check or draft.

The compensation to the trustee will be a commission not upon the income or outgo of the estate but on the dividends actually paid to the creditors. The amount will be 5 per centum on the first \$5,000, 2 per centum on the second \$5,000, and 1 per centum on additional amounts.

(c) *Voluntary and involuntary bankruptcy.*

The distinction between voluntary and involuntary bankruptcy relates only and solely to who files the petition. The right and duties of a person who files his own petition and of the person against whom a petition is filed by his creditors are identical. There is no difference between the creditors. Their rights and the method of exercising them are identically the same.

It has been suggested by some thoughtless friends of the poor man that a voluntary system without the involuntary features would operate in the interest of that class.

In view of the reciprocal nature of transactions, pursuant to which the debtor and creditor classes are created, it seems as though there ought to be no discussion as to the desirability of a law, if we are to have one, which should provide equitably for the rights of both classes. It is said by the gentlemen who support a voluntary system of bankruptcy only, that while they are willing that the unfortunate poor man may release himself from the burden of his debts, they are unwilling to make it possible for the creditors to take the initiative as against a dishonest or failing debtor.

I do not see how the voluntary system could be provided for without, at the same time, working a very great hardship as against the creditor class. For example, this bill provides that enforced liens, created within 4 months of the time of the institution of the proceedings, shall be set aside, and that preferences which have been given within that time may be recovered by the trustee. If it were simply attempted to provide by law for a voluntary system, under like circumstances the debtor would simply wait until the expiration of such 4 months before filing the petition, and as a result the creditors and trustees acting in their behalf would be helpless to prevent the perpetration of open and glaring wrongs.

One of the greatest evils which the proposed legislation is intended to remedy is that of securing preferences by instituting attachment proceedings by connivance, in such manner that it can not be detected, with the result of enabling favored creditors to receive the full amount due them, and in many instances to prevent large parts of the estate being carried away by friends and relatives pursuant to proceedings founded upon fraudulent claims. I do not think that these wrongs can be remedied except by the provisions of an involuntary system pursuant to which every bankrupt will be required to make a complete showing as to his transactions, and a complete surrender of all of his assets to be divided ratably among his creditors.

The advocates of the voluntary system, as it seems to me, are anxious to curry favor with the poor debtors. I think, if they are per-

mitted to enact such a law, that they will prove to have been the debtors' worst enemies, because the enactment of such a law would unquestionably result in a contraction of credits and the debtor would thereby be the sufferer.

Legislation in behalf of commerce which tends to enforce legitimate mercantile transactions, and require of every member of the commercial world fair dealing, and prevent trickery and punish fraud in all its forms, tends directly to the extension of the credit system, gives to every honest man an opportunity to do business under the most advantageous circumstances, reduces the rate of interest upon money borrowed, and in every way promotes the welfare of the honest man, discourages the entrance of dishonest men into the field as competitors, and in all respects tends to the betterment of the condition of the members of society.

It is a matter of great interest to our commercial classes to consider what effect the passage of a voluntary bankrupt act without the involuntary features would have upon the commercial credit and standing of our merchants in the markets of the country. In other words, if unusual advantages were granted to our debtor classes how would their brethren of the creditor classes, both in our own and other States, view the subject?

In general terms the greater the collateral or the more valuable the security, the greater the credit extended on account thereof and the less the interest paid. For example, if a person wishes to borrow a sum of money and offers United States bonds as collateral security, or unincumbered real estate of many times the value of the amount sought to be borrowed, he will have no difficulty in securing a prompt loan at a low rate of interest. The reason is, of course, that in the event the money is not returned it can be surely and promptly collected by a sale of the property upon which a loan has been created. The same thing is true in another form, in this, that if a merchant of steady habits, good character, and large resources in property applies for credit, he has no difficulty in obtaining it in large amounts and in purchasing goods at a low figure; while his less fortunate brother, whose character is unknown, or is unfortunately bad, and who has little or no property, is not able to secure credit except in a limited degree, and can not purchase goods except on short time at high prices.

It might be possible by legislation to so increase the rights of the debtor class, or the borrower of money, and to dwarf the rights of the creditor in realizing upon indebtedness as to really depreciate the value of United States bonds as collateral and unincumbered real estate as a pledge for money loans. The same might be true as to the merchant of good character and ample means. All citizens will agree that any such legislation would be to the manifest detriment of the debtor classes, to say nothing of the moral effect it would produce upon the community.

I respectfully submit that the results as above outlined will be obtained by the passage of a law which will enable the debtor to deliberately prepare to enter into bankruptcy without the possibility of having his preparations interfered with by the institution of involuntary proceedings; and hence that the enactment of such a law ought to be avoided in behalf of the debtor classes with the same persistence that opposition would be urged to, say, the repeal of all laws for the collection of debts.

The friends of the debtor will note a number of safeguards which have been included in the present bill for his protection, as follows:

Under the present laws a single creditor, irrespective of the amount of his claim, may institute proceedings which will probably be the forerunner of other proceedings, while if the bankrupt law be enacted it will require three creditors whose aggregate claims exceed \$500, over and above securities held, to file the petition, unless there are less than twelve creditors in number, in which event one creditor may file the petition provided his claim is, in excess of securities held, equal to or over \$500.

Under the present insolvency laws in every case in which the creditors, or any considerable portion of them, resort to compulsory process, the debtor is at once at a disadvantage; his property is taken from him and in lieu thereof there is, in most of the States, executed a bond which is presumably good at the time of its execution, but which may be worthless by the time the question of his right to recover thereon is finally determined. The debtor must always confront the possibility of having his property seized, separated and sold at sacrifice sales, not that he has committed or contemplates the commission of any fraud, but simply because of a panic among his creditors and the inevitable scramble for precedence. The fact that liens have been acquired by compulsory process by the most diligent of the creditors is ordinarily sufficient to prevent the possibility of a compromise by which the debtor would be enabled to preserve the good will of his business and to continue it.

Under circumstances such as these with this bill in force a composition might be effected without delay and upon favorable terms without the institution of bankruptcy proceedings, because of the possibility of the institution of such proceedings and of the impossibility of seizure by individual creditors, and in the event it should become necessary to secure an adjudication, the debtor would be entitled to the exemptions provided by the laws of his own State, and, in general terms, if an honest man, would be able to secure his discharge.

The creditor in the present chaotic state of the laws not only has to watch the debtor, but the other creditors as well. He has not only to fear a failure on the part of his customer, but must confront the possibility of the giving of a preference by the debtor, the acquiring of a compulsory lien by his competitor, or the entire disappearance or conversion of the property on the faith of which he based his extension of credit. If the law under discussion be enacted the equitable rule of distribution will be enforced, and all of the evils, those that are real and those that are imaginary, will be avoided.

The men of affairs in this country do not want any one-sided law. There is no demand for any such law from any source. The demands which have been presented have been for the bill as it stands.

The masses of the people of this country are honest, they love equality and insist on an equitable adjustment of differences in every relation of life.

(d) Acts of bankruptcy.

The amended section as reported by the Committee on the Judiciary of the Senate defines acts of bankruptcy as follows:

Any person shall be adjudged a bankrupt if he has within 6 months prior to the filing of a petition in bankruptcy against him (1) concealed himself to avoid arrest under, or the service of, civil process; (2) departed or remained away from his residence or place of business with intent to defraud or delay his creditors; (3) procured, or allowed to remain for 40 days, any attachment of his property upon mesne process with intent to give a preference thereby, or, being insolvent, in having suffered judgment to be rendered against him; (4) made a conveyance, gift, or transfer of all, or any part, of his assets with intent to defraud or delay his creditors; (5) made a written

declaration of his inability to pay his debts and filed it in court; (6) made an assignment for the benefit of his creditors; (7) procured or suffered a judgment to be entered against himself with intent to defraud or delay his creditors; (8) secreted his assets to avoid their being levied upon or attached under legal process against him; (9) suffered an execution against him to be returned *nulla bona*; (10) suspended and not resumed payment of his commercial paper for 30 days; (11) voluntarily petitioned to be adjudged a bankrupt; (12) while insolvent for the purpose of giving a preference made a conveyance, mortgage, or pledge of any of his property or suffered any of his property to be taken or levied upon by process of law or otherwise, or permitted the creation of any lien on any of his property; or (13) while insolvent made a contract or contracts personally or by agent or broker for the purchase or sale of a commodity or commodities with an intention not to receive or deliver the same, but merely to receive or pay a difference between the contract and the market price thereof at a time subsequent to the making of such contract or contracts; or (14) who within 3 months next prior to the filing of the petition against him has obtained credit by knowingly making a false statement or representation involving his financial condition, property, or ability to pay.

(e) *Compositions.*

Practitioners, as well as litigants, will remember that the old law provided that after the institution of proceedings the defendant could offer terms of composition before he had made a showing as to the amount or the whereabouts of his assets, and without any regulations as to the terms upon which the same should be offered, or provisions as to payment in the event the same was accepted and confirmed. It was a practice for the debtor to test the credulity of his creditors by offering terms, apparently favorable to the creditors, and if the same were promptly accepted to withdraw his proposition under some pretext or other, and then offer other terms less favorable to the creditors and so on, as long as the creditors were patient and the process bid fair to be profitable.

The present bill contains a clause upon the subject of composition by which the debtor who is honest and desires to compromise his indebtedness will be enabled to do so readily and quickly, while on the other hand the creditor will have ample assurance that he is not being imposed upon, because he must be provided by the debtor with the schedule of assets and the list of liabilities. The bankrupt and other persons having knowledge of his assets must be examined in open court or at a meeting of the creditors before the composition will be considered. The money to be paid or the securities to be given must be deposited with the court before the confirmation will be considered. If it is confirmed the money or securities will be paid or delivered to the creditors as directed by the court. At the hearing the composition will be confirmed if the court shall be satisfied that it will be for the best interests of the parties concerned, and that the debtor has not been guilty of any of the acts which would prevent a discharge. If it is a case in which fraud or dishonesty has been practiced, or if the court is satisfied that the composition will not be for the best interests of all the creditors, the composition will not be confirmed and the case will be proceeded with in bankruptcy. If it transpires after the confirmation of a composition that the same was obtained by the practice of fraud or the commission of perjury it may be set aside at any time within 6 months after the confirmation.

(f) *Liens.*

The Committee on the Judiciary of the Senate reported an amended section upon liens as follows:

Rights, remedies, liens, defenses, and estoppels, legal or equitable, which would have been available to any creditor whose claim is provable under this act, had no bankruptcy proceedings been instituted, shall be available to the trustee to the extent of such right, remedy, lien, defense, and estoppel for the benefit of the estate.

A lien created by or obtained in or pursuant to any suit or proceeding at law or in equity, including an attachment upon mesne process or a judgment by confession, which was begun against a person within 4 months before the filing of a petition in bankruptcy by or against such person, shall be dissolved by the adjudication of such person to be a bankrupt; or if the dissolution of such lien would militate against the best interests of the estate of such person the same shall not be dissolved, but the trustee of such person, for the benefit of the estate, shall be subrogated to the rights of the holder of such lien and empowered to perfect and enforce the same in his own name with like force and effect as such holder might have done had not bankruptcy proceedings intervened. If any such lien shall have been realized upon, the amount shall be paid to the trustee by the officer or beneficiary, less the amount of the taxable costs in favor of the creditors and officers in such suit or proceedings incurred in good faith.

Liens which were given by the bankrupt prior to the filing of the petition, in good faith and not in contemplation of or in fraud upon this act, and for a present consideration, which have been recorded according to law, if record thereof was necessary in order to impart notice, shall not be affected by this act.

(g) The bankrupts' exemptions.

The bill as introduced in Congress provided that the bankrupt should be entitled to such exemptions as were provided for by the laws of his State in force at the time of the filing of the petition. It was not amended by the Committee on the Judiciary of the House, was not referred to in the debate in the House, and has not been amended by the Committee on the Judiciary in the Senate.

Many friends of bankruptcy legislation think that we ought to have an exemption law the same in every State, but there seem to be insurmountable objections to such a law. Investigation shows that the new States have uniformly started out with very large exemptions, and that they have been gradually reduced as the States became older. There are a number of reasons why this should be so. The exemptions vouchsafed to a poor man are not intended primarily for his individual protection, but for the protection of his family. In a new State the items which go to make up the modest wants of a household are more expensive than in the older and better settled States. It is probable that the new States are inhabited in the beginning by a large number of individuals who have migrated for the purpose of getting a new start, and who are anxious not to be interfered with by creditors from their former homes, and this feeling has had its effect upon the legislative bodies, and as a result large exemptions have been provided.

What would be our position if we attempted to fix an exemption of the same amount in all the States of the Union? A Congressman would not be justified, from a political standpoint, in voting to reduce the exemptions in his State by the enactment of a national law. If a law were presented providing for exemptions satisfactory in amount to the Congressmen from, say, Illinois, I imagine that the amount provided would not be large enough to satisfy those from the newer States, while, on the other hand, it would be too large to secure the approval of the representatives of the older States. As to the practical side of the proposition, therefore, I believe that it is impossible to agree upon uniform exemptions. For the reason stated, ordinary exemptions should be larger in the newer States. It would be inequitable and unjust to the honest poor man who is the head of a family in one of the new States, where the necessities of life are much dearer than in the older States, to have only those exemptions which are allowed in the older States; and, on the other hand, it would be a great injustice to the creditor classes to allow, in the older States, the large exemptions to the debtor which are absolutely required in the newer States.

I therefore conclude, as a practical proposition, that it is not feasible to pass a law providing for an exemption of the same money value, or consisting of the same articles, in all of the States; as an equitable proposition, while such a section might sound as though absolute uniformity had been obtained; still the difference in the purchasing power of money and the value of identical articles in different parts of the country would constitute quite as great a variation from uniformity as would be experienced under the several State exemption laws.

(h) Safeguards against the fraudulent concealment of property.

Under the present order of things men too frequently get rich by failing. The proposed law is designed to prevent a dishonest man and his property parting before bankruptcy and meeting after the creditors have been fooled, the proceedings ended, and a discharge procured. A person against whom a petition has been filed either by himself or other persons, is required to file a schedule of assets and a list of creditors. To err in the making out of these papers in a substantial respect either by omission or by the insertion of untruths is declared to be a penitentiary offense. This seems to be all that can be done to secure a truthful showing from the prospective bankrupt. To the end that these statements may be probed, and if untrue, that the facts may be shown, it is provided that the bankrupt and all other persons having knowledge of his affairs may be examined on oath, either in court or before a designated officer. The commission of perjury in such examinations is in like manner a penitentiary offense. It does not seem possible that more could be done in the direction of looking for the facts in the case.

The trustee or representative of the creditors is vested with the title to the property of the person against whom proceedings have been begun as of the date of the institution of the proceedings, and is vested with all the rights enjoyed by judgment creditors in relation to the setting aside of fraudulent conveyances. The trustee is thereby clothed with ample authority to recover all property in which the bankrupt had an interest at the time the proceedings were begun. It does not seem possible to do more under the form of law than this provision includes in the direction of securing to the creditors the property to which they are entitled. The trustee can, without limit of time except as provided by the statute of limitations in the several States, pursue the property of the bankrupt wherever it may be found.

If we knew of additional safeguards against the fraudulent concealment of assets we would be glad to insert them.

(i) The penalties prescribed for wrongdoers.

The penalties of imprisonment for not to exceed 2 years and fines of not to exceed \$5,000 are prescribed in the bill for the wrongdoing of officers.

It is certainly the part of wisdom to exact at the hands of officers who are exercising important trusts, as provided in this bill, a strict performance of their duties and to provide severe penalties in order to prevent wrongdoing, and to punish such officers as shall be guilty of the forbidden acts.

There are two sections of the bill which relate to the anticipated wrongdoing of the bankrupt. The one relates to acts committed before the filing of the petition, and the other to acts committed after it. The

penalty in each case is imprisonment for a period not to exceed 3 years.

The bill has been criticised because of the above provisions; I submit in reply that honesty is the best policy and that it ought to be enforced as against bankrupts as well as other persons, and it is not a defensible position to say that a person, within six months prior to the filing of the petition shall not be punished if he willfully, and with intent to defraud his creditors, commits perjury concerning his property or acts, or obtains on credit property with intent not to pay for it; obtains on credit property from one person with the intent to prefer another creditor; disposes of his property, which was obtained on credit and has not been paid for, otherwise than in the ordinary course of business; makes away with any of his property to prevent its being administered in bankruptcy, or secretes or makes away with his books or documents relating to his property.

I do not think for the same reasons that it is defensible to say that the bankrupt shall not be punished if, after the filing of the petition, he willfully, and with intent to defraud his creditors, attempts to account for any of his property by fictitious losses or expenses; conceals from his trustee any of his property; in case of the proof of false or fictitious debts against his estate fails to disclose the same within 1 month after being possessed of such knowledge; makes any false oath concerning his property or acts in any proceeding in bankruptcy; makes any payment or gives any advantage, or the written promise of either, to any creditor, with intent to affect the proceedings under this act; makes any substantially false valuation of his property in his schedule of assets, or omits from his schedule of assets any of his property; omits from the list of his creditors any person to whom he is indebted in any substantial amount, or includes any person to whom he is not indebted, or lists a creditor for an amount substantially more than the true indebtedness, or makes away with or falsifies any of his books or documents relating to his property.

It is respectfully submitted that the acts here enumerated and the perpetration of which is forbidden, will not be perpetrated by honest men, and that if they are perpetrated by dishonest men, such perpetrators ought to be punished.

I am conscious that there are large numbers of the members of the mercantile world who now practice many of the acts here forbidden, and consider it an evidence of shrewdness to do so; such practices are morally wrong. They are commercially wrong, are detrimental to the proper conducting of business, and are besides calculated to decrease rather than to increase the volume of commercial transactions.

I therefore respectfully submit that the enactment of these statutes will have a deterrent effect upon such wrongdoers, and that good morals and good business will be promoted thereby.

The bill imposes penalties of imprisonment for not to exceed 3 years, or fine not to exceed \$2,000, or both, upon creditors for wrongdoing.

All of us ought, in my judgment, to agree that these provisions are required to guard against imposition by the holders of fraudulent claims, and that class of creditors who in times past have felt justified in "padding" their claims to the end that the per centum realized might equal the principal of their *bona fide* claims.

It is respectfully submitted that the foregoing provisions require at the hands of the bankruptcy officers, the bankrupt, and the creditors, only such conduct as becomes honest men, and that their enactment and enforcement will prevent the recurrence of the scandals which arose out of the administration of the old law.

It is anticipated that the prospect of being deprived of the advantages of fraudulent mercantile transactions, with the possibility of a term in the penitentiary, will well-nigh exterminate the fraudulent mercantile adventurers who have for years been thriving in all parts of the country.

It is unfortunate but nevertheless true that there are many men able and competent to conduct business upon a large scale, whose moral perceptions are so obtuse that it is necessary to forbid the enactment of wrongful practices and to fix a penalty for the perpetration of the same in order to prevent them from practicing frauds and deceptions, which are demoralizing in a moral sense and destructive of property rights in a business sense.

There is no question but that the passage of this bill will exercise a desirable moral influence in the prevention of commercial wrongs which are now openly perpetrated but which are forbidden in this measure. For example, it is now considered smart practice by many men to spirit away property, falsify books, destroy records, and to purchase goods upon credit, convert them into cash and leave to the creditor nothing but the poor consolation of attaching the remnant of goods and garnishing debtors who owe accounts which are worthless.

There is a thoughtless class of opponents to the enactment of a bankruptcy law who suggest that the possibility of securing a discharge will beget a reckless disposition upon the part of the debtor, and that he will be likely to take speculative chances in cases where he would not do so under the present conditions. I respectfully submit that the point is not well taken, and that the effect would be quite the reverse. Under the laws of most of the States there is no legal objection to the purchase of goods on credit and to their sale outside of the ordinary course of business. An act of this kind under the proposed law might result in the application of the debtor's assets to the payment of his debts *pro rata* and in his serving a term in the penitentiary. It is competent for a debtor in failing circumstances in almost any of the States to purchase goods on credit and apply them to the payment of the debts of a favored creditor, by some one of the many forms of preferences, that is, by a conveyance direct, by the giving of a chattel mortgage or lien, by a confession of judgment, or by an attachment connivance. A similar act, under the provision of this bill to which I have referred, would subject the individual in question to a term in the penitentiary, while the act pursuant to which a fraudulent preference was given would be annulled, if it occurred within a period of 4 months preceding the date of the adjudication, and the property would be restored to the estate.

There is no adequate provision in the laws of any of the States, so far as I am advised, by which the bankrupt can be compelled to show the reason of his failure, the whereabouts of his assets, or the nature of antecedent transactions. It is here provided not only that the bankrupt may be examined, but that any person having knowledge of his affairs may be examined touching transactions of interest to the creditors.

In most of the States the assignee of the debtor can not attack any of the transactions or conveyances of his assignor because he stands as his representative; but it is especially provided in this measure not only that the assignee may do so, but that it is his duty to attack all proceedings which are forbidden by the act pursuant to which property was transferred by the assignor.

Under the provisions of the law now in force, the honest and the dishonest insolvents are all in one class. The conditions will be different

upon the enactment of this bill; under its provisions the honest insolvent will be awarded his discharge and will have an opportunity to exercise his capabilities, whatever they are, without let or hindrance, while the dishonest insolvent will be punished for his infractions of the law.

Fire insurance rates are based upon statistics as to the number of accidental fires, and allowance is made for the work of the incendiary. Business risks are based on the losses incident to the ordinary vicissitudes of trade with a per centum added for acts of dishonesty. The consumers have to pay the per centum which is added. If the laws are so confused or so inadequate in their provisions that dishonesty runs rampant, the per centum will be very large; if a law shall be enacted which shall reduce acts of dishonesty and the losses incident thereto to the minimum, the consumer will not have to pay the larger per centum.

The arrest of the bankrupt to prevent his departure from the district within the first 6 months after the adjudication is in the interest of the proper administration of the estate. The arrest is only to be made after the application has been made to the court, and it has been judicially determined that he is about to depart from the district, and that his departure will interfere with the proper and advantageous administration of the estate. The bankrupt will be brought forthwith before the court upon being arrested.

If the bankrupt has escaped to another district he may be brought back in the same manner, and upon the same terms, as if he were an individual who had committed a criminal offense under the laws of the United States and had been indicted.

We do not want too many penalties, but we must have a sufficient number to prevent the law from being used, metaphorically speaking, as a fire escape down which scoundrels may climb to the highway of financial safety after having thrown their assets out of the window into the hands of a trusted accomplice.

Under the old law, prosecutions for violation of the act and the perpetration of commercial wrongs which were forbidden were few and far between. It is possible, under the provisions of this bill, to make the violations of it very unpopular, and to visit swift and adequate punishment upon such persons as do violate its provisions.

It is a well-worn saying that "competition is the life of trade." This should be modified so as to be applicable only to honest competition. Dishonest competition is the death of legitimate trade, and where dishonest competition is practiced to any large extent the result can not be other than to drive from the field of legitimate trade the honest men, and to surrender the affairs of commerce to the dishonest men.

One of the worst forms of competition that our legitimate merchants have to contend with is that of the individual who buys goods upon credit, with the intent not to pay for them, disposes of them at sacrifice sales, and then swindles his creditors. This law can have no better or more praiseworthy purpose than to prevent such species of robbery.

(j) The discharge of honest insolvents.

A discharge in bankruptcy in order to be granted must be applied for after 2 and within 6 months following adjudication. If the bankrupt fails therein and can convince the judge that he was unavoidably prevented from applying for his discharge within that time it may be applied for within the next 6 months, but can not be granted upon an application made after the expiration of 12 months after the adjudica-

tion. A discharge will not be granted if the bankrupt was a merchant, manufacturer, or trader, whose annual transactions exceeded \$5,000, and who failed to keep proper books of account, from which his true condition might be known, or who has committed any felony or perjury, failed to act in good faith concerning the administration of his estate, made a preference which has not been surrendered, knowingly made a materially false statement concerning his affairs to any person for the purpose of obtaining credit or of being communicated to the trade, conspired to defeat the operation of the act, made a fraudulent transfer of his property, or neglected, without satisfactory excuse, any duty as a bankrupt.

A discharge may be set aside within 2 years after being granted, if it transpires that the same was fraudulently obtained.

The proposition to discharge an honest bankrupt is supported by sound public policy and the dictates of human sympathy for the unfortunate, and is not in practical derogation of the material rights of the creditor.

Sound public policy requires that every citizen should have a free and unrestricted opportunity to add to the wealth of the community to his full capacity. The one who has failed in business has learned an invaluable lesson, either the one of his want of capabilities, or the one of how to avoid the errors which occasioned his failure. As a citizen he should be unrestricted as to what vocation in life he shall pursue. He ought to be, by his experience, a more valuable citizen, and should be at liberty to prosecute such calling and in such way as will best serve his necessities and enable him to add to the aggregate accumulation of wealth. As an honest man he ought to be discharged from his obligations to the end that he may become, if he can, a proprietor instead of a salaried clerk. If he is held down by the burden of debt he is ordinarily forced into competition with the great army of day laborers and salaried workers and it is not possible that he can make any considerable payment of obligations and at the same time provide for the education and maintenance of the average family. If the purpose of the creditor in preventing the discharge of the bankrupt is to secure the payment of the amount due, I respectfully submit that it is unavailing. It is not likely that a man will be able to pay off a large indebtedness, out of such returns as could be secured in any clerical capacity, but there are instances in which honest men, who have been discharged from their obligations as bankrupts, have succeeded in recovering their position and in accumulating a sufficient amount of money by fortunate enterprises to enable them to pay their debts, principal and interest, to their own delight, and to the gratification of their creditors.

Mr. Clay, during the debate prior to the passage of the law of 1841, made in the Senate of the United States an eloquent appeal in behalf of honest insolvents, as follows:

Mr. President, power and duty are often synonymous. The possession of the exclusive power to pass laws on the subject of bankruptcies by the General Government, draws after it a high and responsible obligation and duty to the States, to the Union, and to the people, the performance of which that Government is not at liberty to elude or neglect.

The right of the State (I use the term in its broadest sense) to the use of the unimpaired faculties of its citizens as producers, as consumers, and as defenders of the commonwealth, is paramount to any rights or relations which can be created between citizens and citizens. But an honest and unfortunate debtor borne down by a hopeless mass of debt, from beneath which he can never rise, is prostrated and paralyzed and rendered utterly incapable of performing his duties to his family or his country, to say nothing of the dictates of humanity, nothing of the duties of a

parental government to lift up the depressed, to heal the wounds, and cheer and encourage the unhappy man who sees in the past, without his fault, nothing but ruin and embarrassment, and, in the future, nothing but gloom and despair. I maintain that the public right of the State, in all the faculties of its members, moral and physical, is paramount to any supposed rights which appertain to a private creditor. This is the great principle which lies at the bottom of all bankrupt laws, and it is this which gives to the States the right to demand the passage, and imposes upon Congress the duty of enacting a bankrupt system.

The number of bankrupts now in the United States has been estimated, by respectable authority, as high as 500,000, and, with their families and connections, the total number of all who are interested in the passage of a bankrupt system has been stated as large as 2,000,000.

I hope and believe that this is an exaggerated estimate. But the number is undoubtedly very great, be it what it may; and it comprehends many of our most active, enterprising, and intelligent citizens. Who can think of them without the liveliest sympathy in their present hopeless condition, without being irresistibly prompted to exercise all the powers with which we are constitutionally invested, to raise them up from the depths of despair in which they lie, and bring them back to the enjoyment of life, the support of their families, and the service of their country.

The Declaration of American Independence, which announced our existence as a nation, solemnly proclaims, as a self-evident truth, that the right of every individual person to life, liberty, and the pursuit of happiness is unalienable. Does the wretched bankrupt, sunk down and overwhelmed by perhaps unmerited misfortunes, against which no human foresight or prudence could guard, enjoy the benefit of this maxim? He is not, indeed, deprived of life; but he drags out a miserable and lingering existence, without one cheering hope. The humanity of progressive civilization has exempted his person from incarceration in the dark cells of a public jail; but the liberty which is granted to him enables him only to see more distinctly, in the light of heaven, and intensely to feel the misery of his condition. Stripped of all motives to human exertion, with the incubus of an immovable mass of debt upon him, surrounded by a family, sharing, without being able to alleviate, his sorrows and sufferings, he is mocked by the privilege of "the pursuit of happiness," pronounced to be unalienable in the most memorable declaration of human rights that was ever promulgated to the world. Let us, sir, make that guaranty substantial, practical, available, by fulfilling the duty imposed upon us in the power delegated in the Constitution to pass this law.

Commerce is but legitimate speculation, and experience teaches that a very large percentage of its votaries are sooner or later overcome by its vicissitudes, and must either be relieved by a wise exercise of the rights guaranteed by the Constitution or be left beneath an unsurmountable burden of indebtedness.

There is a large class of good people who believe in the iron rule that if the individual can not pay his debts he should owe them, but the great mass of human beings realize that many debts are unjust, that many of the financial responsibilities which are incurred by the individual are not foreseen or anticipated, and believe that it is better policy to discharge the honest unfortunate and thereby give him a hope for the regaining of his financial position in the world, and the better enable him to provide for those who are dependent upon him, and they are therefore willing that this wise provision of the law should be exercised under proper restrictions.

All civilized governments grant exemptions to poor men. It is of course upon the theory that the helpless ones of every family should be protected, both for their benefit and to prevent the possibility of their becoming public charges. These provisions of the law are simply to the effect that the creditor may enforce his process against the debtor, except that there shall be exempt therefrom certain articles needed in the household and a modest homestead upon which to live. The giving of a discharge to an honest insolvent is but an exemption in another form; that is, instead of saying that property of a certain description and a homestead of a certain value shall not be subject to compulsory process, the law provides that all debts, except those of a fiduciary character, incurred prior to a certain date, shall not be collectible by law.

The most frequent reply that is made to him who advocates the discharge of a bankrupt by law is the statement that any honest man can procure a discharge from his creditors, provided he is entitled to it. This allegation is not true. In many cases the creditors of the unfortunate debtor become dispersed, rights are transferred, and obligations descend by the laws of distribution from deceased creditors to minor heirs, and in many cases it is impossible to tell who the creditors of a debtor are. There are many large houses which make it a rule never to grant discharges upon any terms except that of payment of dollar for dollar of the indebtedness. There are many large houses and small houses, too, for that matter, which ostensibly accept settlements, but attach thereto certain conditions secretly which are abhorrent to men possessing instincts of fair play.

To have a uniform law, pursuant to which discharges will be granted to those who deserve them, will prevent the present practices in relation to discharges, which amount to fraud and moral perjury on the part of the debtors, and to blackmail upon the part of the creditors. The change will amount to substituting a standard of honesty for the determination of the question as to whether a man shall or shall not be discharged, instead of a varying standard which may be erected by the whim or caprice of the several creditors.

Under the old law men were occasionally discharged from their obligations who were not thought, by the best people cognizant of the facts, to be entitled to such consideration. The measure now under discussion was framed with very great care to prevent a recurrence of this wrong. I am not an enthusiast of the kind that believes it is possible to attain perfection in a world inhabited by human beings and whose laws are administered solely by them, but I believe that the measures for the prevention of wrong contained in this bill are as full and as simple as they can be made, and that there will never be a case in which a man not entitled to a discharge will receive one if the creditors are vigilant in the premises.

My conclusion, therefore, is, that claims against insolvents, whose estates have been distributed in part to their creditors, are worthless, and that the cancellation of them is no material loss to the creditors, while it is advantageous to the individual debtors, and to the community at large, and that discharges ought to be granted to honest bankrupts.

(k) Economy and expedition of the administration of bankrupt estates.

If this bill were a duplicate of the old one it ought not to be passed. I do not understand that any of the friends of this movement have a word to say in behalf of or in defense of the former law. That measure was enacted at the close of the war in compliance with the demands of a particular class. It was faulty in its provisions; it was administered under unfavorable circumstances; many of the persons who availed themselves of its provisions did not have any estates; many of the officials absorbed to a large extent the estates confided to them; and the conditions then prevalent made it possible for it to be used to the detriment of the better classes, and hence it was repealed at the instance of the people.

The delays under the old law were very numerous, and in many cases for a long time. This was chiefly because of two reasons. The first was that the procedure provided under the law was not such as to facilitate the administration of estates; and, second, the officers who were

charged with the responsibility of conducting the business were interested in a financial way in prolonging the administration. It is one of the marked features of the present bill that its machinery is simple and easily adapted to the peculiar circumstances which invariably attend the various cases coming before the courts, and is designed to make quick results the rule and not the exception, as under the old law.

One of the chief evils which we hear spoken of, with the greatest frequency, in connection with our former bankruptcy experiences, is the long delays in closing up estates.

The theory of this law is that in order to secure quick results from the persons having in charge the administration of the law, we must so compensate them that they will be pecuniarily interested in performing their duties promptly, and in securing the settlement of the estates as soon as it can be done for the best interests of the creditors.

The trustee who handles the estate, reduces it to cash, and pays it over to the creditors, receives a commission, not upon the income or outgo of the estate, nor on the property which he handles at an estimated valuation, but upon the dividends actually paid to the creditors. The manner of the payment of this commission will interest this officer in keeping the expenses as low as possible and in having the dividends as large and payable as quickly as the best interest of the creditors will permit. The compensation stated for the referee is a fixed annual salary, and a fee per case as before provided.

It is therefore obvious that the three officers who are to perform the chief duties in the administration of the estates are each of them pecuniarily interested in expediting the business before them. The result will be a prompt administration under the new law.

Another of the evils attending the administration of the last act was that of the fee system, which to a large extent absorbed the assets of estates, and in addition was productive of excessive delays in their administration. For example, the register received a fee for every hearing had in administering estates, a fee for every paper which was certified to by him; a fee for every memorandum of proceedings conducted before him, which was transmitted to the clerk of the court, and so on, *ad infinitum*. The approximately corresponding officer, under the proposed law, will receive a small annual salary and a small fee per case when the case is concluded and the records have been certified and returned to the clerk's office.

The assignee under the old order of things received a commission on all moneys paid out, a fee for every meeting he attended, a fee for every account submitted to meetings of creditors, and so on, *ad nauseam*. The approximately corresponding officer, as provided by the measure under consideration, is the trustee. His entire compensation will consist of a small commission upon amounts paid creditors as dividends. The sums paid to him, both by reason of the manner in which the computation is made as to the amount due and by the time of payment, will be an inducement to him to expedite the administration of the estates before him, and to keep the expenses at a minimum.

The district clerk formerly was compensated according to the schedule of fees, which provided that his every official act resulted in a diminution of the assets of the estates. Under the provisions of this bill, the same officer will be paid a fixed fee of \$10, and will receive it in advance at the time of the filing of the petitions in the case. This arrangement will not only result in very great economy in the estates administered, but will add to the speed in their administration.

It has been a difficult problem to solve, how to provide for the compensation of the referees, so as to prevent their being interested in delaying proceedings and multiplying fees. The plan finally determined upon is to have them paid by the Government and at the same time to have the Government reimbursed for the outlay on that account, by the payment of a percentage by every estate which is administered, or in which a composition is confirmed; this method of compensating the referees or assistant judges is but in accord with the recognized duty of the Government to pay its judiciary out of the national treasury. This plan will annually save millions of dollars to bankrupt estates without, in all probability, costing the Government a dollar. If this plan were objected to because of the possible expense to the Government I would in reply simply submit that, since the Constitution reserves the right to Congress to pass laws upon this subject, it also imposed a responsibility to do so, and that of paying the necessary and reasonable expenses of its enforcement.

There are citizens of the United States, resident in every State in the Union, who are honest insolvents, and who will probably take the benefit of this measure if it shall be enacted. There are other citizens who will enforce its provisions as against their debtors, in the event it is placed upon the statute books. I do not consider it any reply to these citizens to say that the Government will not enact the law pursuant to the terms of the Constitution, because it will create an expense in addition to those already incident to the conducting of the Government. It is the duty of the legislators to see that the expenses which it incurs are not out of proportion to the good that it is expected to accomplish, and that they are not in any respect excessive. When such expenses are kept down to such a basis the additional expense is but reasonable, and is necessary in order to give to the citizens their full rights under the Constitution.

We confidently believe that we have reduced the expenses to the estates, the creditors and the Government to the minimum, and made the best possible provisions for expedition in the administration of the estates.

IN CONCLUSION.

This bill was prepared in the interest of honest men. In its every sentence care has been taken to fully guard the rights of the weak and curb the power of the strong; to adjust every burden where it belongs; to fix every responsibility on the shoulders by which it should be borne, and in all things and to the greatest degree to equitably adjust the rights of the two great classes, the debtors and creditors, each of which in the grand aggregate of amounts exactly balances the other, and whose voluntary transactions constitute the commerce of the world.

Gentlemen, I thank you for your kindness. [Applause.]

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[MOTTO: "A place for everything, and everything in its place."]

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OFFICERS AND CHAIRMEN OF COMMITTEES
OF THE
NATIONAL CONVENTION OF THE REPRESENTATIVES OF COMMERCIAL BODIES
OF THE UNITED STATES.

<i>President,</i> JAY L. TORREY, ST. LOUIS.	<i>Treasurer,</i> PETER NICHOLSON, ST. LOUIS.	<i>Secretary,</i> JAMES T. WYMAN, MINNEAPOLIS.	<i>Assistant Secretary,</i> FRANCIS J. McMASTER, ST. LOUIS.
<i>Presidential,</i> JAMES O. BROADHEAD, ST. LOUIS.	<i>Congressional,</i> LOWE EMERSON, CINCINNATI.	<i>Finance,</i> WILLIAM T. BAKER, CHICAGO.	
<i>Bankruptcy Literature,</i> BREEDLOVE SMITH, NEW ORLEANS.	<i>Executive,</i> WILLIAM E. SCHWEPPE, ST. LOUIS.		

ROOMS OF THE ASSOCIATED WHOLESALE GROCERS OF ST. LOUIS.

Bodies which have been reported as being in favor of bankruptcy legislation, a few of the citizens who have petitioned therefor, and individuals who are members of the organization which has been perfected to promote the passage of the Torrey bankrupt bill, are summarized by States and Territories, as follows :

ALABAMA.

Commercial and Industrial Association of Montgomery.

Hiram G. Bond, Ensley City.
Robert C. Brickell, Huntsville.
Orville F. Cawthon, Mobile.
Charles S. Halsey, Huntsville.
Milton Hume, Huntsville.
Breck Jones, New Decatur.
Henry C. Tompkins, Montgomery.

ARKANSAS.

Arkansas Lumbermen's Association, Little Rock.
Citizens of Fort Smith (petition).
Citizens of Hartmann (petition).
Citizens of Helena (petition).
Citizens of Little Rock (petition).
Fort Smith Chamber of Commerce.
Helena Chamber of Commerce.
Little Rock Board of Trade.
Pine Bluff Board of Trade.

James H. Clendening, Fort Smith.
John G. Fletcher, Little Rock.
James A. Fones, Little Rock.
Albert S. Honnet, Pine Bluff.
John J. Hornor, Helena.
George G. Latta, Hot Springs.
Logan H. Roots, Little Rock.
William G. Whipple, Little Rock.

CALIFORNIA.

Chamber of Commerce, Eureka.
Citizens of Haywards (petition).
Citizens of Los Angeles (petition).
Citizens of Plano (petition).
Citizens of San Francisco (2 petitions).
Pacific Coast Board of Commerce, San Francisco.
San Francisco, Oakland, and Haywards business and professional men (petition).
Vallejo Board of Trade.

CALIFORNIA—Continued.

Abner Doble, San Francisco.
J. Ludwig Koethen, Riverside.
Samuel B. Lewis, Los Angeles.
William R. Tolles, San Bernardino.
John Vance, Eureka.

COLORADO.

Chamber of Commerce, Denver.
Chamber of Commerce, Trinidad.
Citizens of Colorado Springs (petition).
Citizens of Denver (3 petitions).
Pueblo Board of Trade Association.

J. Sam Brown, Leadville.
Walter P. Kellogg, Denver.
Andrew McClelland, Pueblo.
Isham B. Porter, Denver.

CONNECTICUT.

Chamber of Commerce, New Haven.
Citizens of Bridgeport (petition).
Citizens of Hartford (petition).
Citizens of Norwich (2 petitions).
Connecticut State Board of Trade.
Hartford Board of Trade.
Norwich Board of Trade.

James D. Dewell, New Haven.

DELAWARE.

Wilmington Board of Trade.

Daniel W. Taylor, Wilmington.

DISTRICT OF COLUMBIA.

National Wholesale Druggists' Association, Washington City
Photographers' Association of America, Washington City.

Bodies which have been reported as being in favor of bankruptcy legislation, etc.—Cont'd.

FLORIDA.

Chamber of Commerce, Pensacola.
Citizens of Key West (petition).
Jacksonville Board of Trade.

Solomon N. Van Praag, Pensacola.
William A. S. Wheeler, Pensacola.
Robert W. Williams, Tallahassee.

GEORGIA.

Citizens of Columbus (petition).
Citizens of Cuthbert (petition).
Brunswick Board of Trade.
Macon Board of Trade.
Retail Grocers' Association, Augusta.

Benjamin F. Abbott, Atlanta.
Columbia Downing, jr., Brunswick.
Walter B. Hill, Macon.
McKinne Law, Augusta.
Junius G. Oglesby, Atlanta.
John R. Young, Savannah.

IDAHO.

Citizens of Chesterfield (petition).
Citizens of Parma (petition).

Isaac P. Vollmer, Lewiston.

ILLINOIS.

Bankers of Chicago (petition, including a number who heretofore protested, but now petition in favor of bill).
Board of Trade of the City of Chicago.
Business Men's Association, East St. Louis.
Business Men's Association, Dixon.
Business Men's Association, Lincoln.
Chicago Furniture Manufacturers' Association (2 resolutions, 1889, 1890).
Chicago Jewelers' Association.
Chicago Paint, Oil, and Varnish Club.
Chicago Paper Trade Club.
Citizens' Improvement Association, Rock Island.
Citizens of Bloomington (petition).
Citizens of Chicago (withdrawal from protest against and petition in favor of bill).
Citizens of Chicago (48 petitions, containing 954 names).
Citizens of East St. Louis (petition).
Citizens of Edwardsville (petition).
Citizens of Herscher (petition).
Citizens of Hinckley (petition).
Citizens of Monmouth (petition).
Citizens of Mount Vernon (petition).
Citizens of New Windsor (petition).
Citizens of Nokomis (petition).
Citizens of Pittsfield (petition).
Citizens of Quincy (2 petitions).
Citizens of Saybrook (petition).
Citizens of Sparta (petition).
Citizens of Unity (petition).
Citizens of Wayne City (petition).
Commercial Club, Mattoon.
Elgin Board of Trade.
Lincoln Improvement Association.
National Association of Stove Manufacturers, Chicago.
National Furniture Manufacturers' Association, Chicago.
Peoria Board of Trade.

Thomas M. Avery, Chicago.
Henry H. Aldrich, Chicago.
Thomas Austin, Quincy.
William T. Baker, Chicago.
David F. Barclay, Elgin.
Adolphus C. Bartlett, Chicago.
J. Harley Bradley, Chicago.
Mortimer N. Burchard, Chicago.
Thomas Davies, Chicago.
William B. Dunlap, Mattoon.
Leo. Ernst, Chicago.
Herman F. Hahn, Chicago.

ILLINOIS.—Continued.

Frederick Hass, Rock Island.
Adolph Karpen, Chicago.
Franklin MacVeagh, Chicago.
William A. Mason, Chicago.
Charles P. McAvoy, Chicago.
Justin W. Meacham, Chicago.
Charles C. Mills, Peoria.
Henry T. Noble, Dixon.
Henry D. Sexton, East St. Louis.
Charles H. Seybt, Highland.
Graeme Stewart, Chicago.
Peter Van Schaack, Chicago.
Daniel K. Tenney, Chicago.
George H. Vrooman, Chicago.
Louis C. Wachsmuth, Chicago.
John R. Walsh, Chicago.
Louis Wampold, Chicago.

INDIANA.

Citizens of Crawford (petition).
Citizens of Fort Wayne (petition).
Citizens of Indianapolis (petition).
Citizens of Jamestown (petition).
Citizens of Madison (petition).
Citizens of New Albany (petition).
Citizens of Richmond (petition).
Citizens of Terre Haute (petition).
Merchants and Manufacturers' Club, Madison.
National Brick Manufacturers' Association (fifth annual convention), Indianapolis.
Richmond Board of Trade.

Joseph C. Abbott, Madison.
Frederick A. W. Davis, Indianapolis.
Washington I. Dulin, Richmond.
Roscoe O. Hawkins, Indianapolis.
Merrill Moores, Indianapolis.
James W. Wartmann, Evansville.
William J. Wood, Evansville.

INDIAN TERRITORY.

Citizens of McAlister, Lehigh, and Savanna (petition).

IOWA.

Blue Grass League of Southwestern Iowa, Creston.
Board of Trade of Burlington.
Business Men's Association, Davenport.
Business Men's Association, Keokuk.
Citizens of Algona (petition).
Citizens of Council Bluffs (petition).
Citizens of Creston (petition).
Citizens of Davenport (petition).
Citizens of Dubuque (2 petitions).
Citizens of Keokuk (petition).
Citizens of Monticello (petitions).
Iowa Bankers' Association, Dubuque.
State Business Men's Association, Des Moines.
State Business Men's Association, Marshalltown.

William L. Allen, Davenport.
John Blaul, Burlington.
John H. Branch, Marengo.
Frank Le Bron, Keokuk.
Arthur S. Burnell, Marshalltown.
Jonas M. Cleland, Sioux City.
Philip M. Crapo, Burlington.
James B. Harsh, Creston.
Daniel B. Nash, Davenport.
Lucius Wells, Council Bluffs.

KANSAS.

Citizens of Abilene (petition).
Citizens of Arkansas City (petition).
Citizens of Burlington (petition).
Citizens of Caldwell (petition).
Citizens of Kingman (2 petitions).
Citizens of Lawrence (petition).
Citizens of Leavenworth (2 petitions).

Bodies which have been reported as being in favor of bankruptcy legislation, etc.—Contd.

KANSAS—Continued.

Citizens of Sylvia (petition).
Citizens of Tribune (petition).
Citizens of Wichita (petition).
Leavenworth Board of Trade.
Merchants' Protective Association, Salina.
Wichita Board of Trade.

Winfield S. Corbett, Wichita.
James M. Graybill, Leavenworth.
Ezra M. Ober, Salina.
Uri B. Pearsall, Fort Scott.

KENTUCKY.

Citizens of Sharon Grove (petition).
Hopkinsville Commercial Club.
National Board of Trade (twenty-first annual session), Louisville.
National Burial Case Association, Louisville.
Owensborough Board of Trade.
Paducah Commercial Club.

John M. Atherton, Louisville.
E. Birch Bassett, Hopkinsville.
Temple Bodley, Louisville.
William Cornwall, Louisville.
James E. Gaither, Louisville.
Frank T. Gunther, Owensborough.
John Morris, Louisville.
Ed. P. Noble, Paducah.
William T. Rolph, Louisville.
Sterling B. Toney, Louisville.
Harry Weissinger, Louisville.
Rozel Weissinger, Louisville.

LOUISIANA.

Chamber of Commerce and Industry of Louisiana, New Orleans.
Citizens of New Orleans (2 petitions).
Mechanics, Dealers and Lumbermen's Exchange, New Orleans.
Merchants of New Orleans (petition).
National Board of Trade (twenty-second annual session), New Orleans.
New Orleans Attorneys (petition).
New Orleans Clearing house.
New Orleans Board of Trade (Limited.)
Shreveport Board of Trade.
Wholesale Grocers' Association, New Orleans.

Albert Baldwin, New Orleans.
William J. Behan, New Orleans.
Louis Bush, New Orleans.
Frank M. Hicks, Shreveport.
Chauncey S. Kellogg, New Orleans.
Albion K. Miller, New Orleans.
Fred F. Myles, New Orleans.
William B. Schmidt, New Orleans.
Breedlove Smith, New Orleans.
James F. Utz, Shreveport.

MAINE.

Biddeford Board of Trade.
Calais Board of Trade.
Citizens of Farmington (petition).
Citizens of Portland (3 petitions).
Portland Fruit and Produce Exchange
Portland Mechanics' Exchange and Board of Trade.
Saco Board of Trade.
State Board of Trade, Biddeford.

Albert R. Savage, Auburn.

MARYLAND.

Business Men's Association, Annapolis.
Citizens of Baltimore (3 petitions).
Shoe and Leather Board of Trade, Baltimore.

Thomas Deford, Baltimore.
J. Ross Diggs, Baltimore.

MARYLAND—Continued.

Solomon Frank, Baltimore.
J. Walter Hodges, Annapolis.

MASSACHUSETTS.

Arkwright Club, of Boston.
Board of Trade, Amesbury.
Board of Trade, Lowell.
Board of Trade, Pittsfield.
Board of Trade, Springfield.
Boston Board of Fire Underwriters.
Boston Executive Business Association.
Boston Fish Bureau.
Boston Merchants' Association (2 resolutions, 1889, 1890).
Boston Merchants' Club.
Boston Paper Trade Association.
Citizens of Boston (13 petitions).
Citizens of Bridgewater (petition).
Citizens of Chicopee Falls (petition).
Citizens of Fitchburg (petition).
Citizens of Greenfield (petition).
Citizens of Holyoke (petition).
Citizens of Lawrence (petition).
Citizens of Marlborough (petition).
Citizens of Nantucket (petition).
Citizens of New Bedford (petition).
Citizens of Northampton (petition).
Citizens of North Dighton (petition).
Citizens of Salem (petition).
Citizens of Springfield (2 petitions).
Citizens of Woburn (petition).
Citizens of Worcester (2 petitions).
Commercial Club, Boston.
Gardner Board of Trade.
Grocers' Association, Boston.
Mechanics' Exchange, Boston.
National Paint, Oil and Varnish Association (annual session 1889), Boston.
New England Furniture Exchange, Boston.
Paint and Oil Club of New England, Boston.
Shoe and Leather Association, Lynn.
Wholesale Grocers' Association, Boston.

Noah W. Farley, Boston.
James B. Forsythe, Boston.
Rufus S. Frost, Boston.
Charles A. Grinnell, Boston.
George A. Miner, Boston.
Beverly K. Moore, Boston.
Leopold Morse, Boston.
Alexander H. Rice, Boston.
Charles Richardson, Boston.
Edward C. Rogers, Springfield.
Joseph Sawyer, Boston.

MICHIGAN.

Business Men's Association, Ann Arbor.
Business Men's Association, East Saginaw.
Business Men's Association, Grand Haven.
Business Men's Association, Kalamazoo.
Business Men's Association, Sault Ste. Marie.
Chamber of Commerce, Sault Ste. Marie.
Citizens of Battle Creek (petition).
Citizens of Detroit (3 petitions).
Citizens of Grand Haven (2 petitions).
Citizens of Grand Rapids (3 petitions).
Citizens of Lansing (petition).
Citizens of Muskegon (petition).
Citizens of Owosso (petition).
Citizens of Sault Ste. Marie (2 petitions).
Citizens of Stanton (petition).
Citizens of Traverse City (petition).
Detroit Paint, Oil and Varnish Club.
Furniture Manufacturers' Association of Northwestern Michigan, Muskegon.
Grand Rapids Board of Trade.
Grand Rapids Furniture Manufacturers' Association.
Michigan State Business Men's Association, Grand Rapids.

George H. Barbour, Detroit.

Bodies which have been reported as being in favor of bankruptcy legislation, etc.—Cont'd.

MICHIGAN—Continued.

George G. Briggs, Grand Rapids.
Wellington R. Burt, East Saginaw.
John A. Covode, Grand Rapids.
Bernhard Desenberg, Sault Ste. Marie.
Albert K. Edwards, Kalamazoo.
Theodore H. Hinchman, Detroit.
George E. Howes, Battle Creek.
Adam S. Kedzie, Grand Haven.
Edward A. Moseley, Grand Rapids.
Samuel E. Pittman, Detroit.
Charles R. Sligh, Grand Rapids.

MINNESOTA.

Board of Trade of Minneapolis.
Chamber of Commerce, St. Paul.
Citizens of Duluth (petition).
Citizens of Mankato (petition).
Citizens of Marshall (petition).
Citizens of Minneapolis (2 petitions).
Citizens of Rochester (2 petitions).
Citizens of St. Paul (5 petitions).
Citizens of Waterville (petition).
Contractors and Builders' Board of Trade, St. Paul.
Duluth Board of Trade.
Duluth Chamber of Commerce.
Fergus Falls Chamber of Commerce.
Jobbers' Association, Minneapolis.
Minneapolis Produce Exchange.
Rochester Board of Trade.
St. Paul Board of Trade.
St. Paul Jobbers' Union.
West Duluth Chamber of Commerce.
Wholesale Grocers' Association, Minneapolis.
Winona Board of Trade.
Winona Jobbers' Association.

Isaac Atwater, Minneapolis.
Melvin R. Baldwin, Duluth.
John M. Bartlett, Minneapolis.
Joel B. Bassett, Minneapolis.
William B. Dean, St. Paul.
Paul D. Ferguson, St. Paul.
Frank L. Greenleaf, Minneapolis.
Christopher B. Heffelfinger, Minneapolis.
Thomas B. Janney, Minneapolis.
Anthony Kelly, Minneapolis.
Elliot A. Knowlton, Rochester.
Daniel R. Noyes, St. Paul.
Charles E. Sawyer, Crookston.
Channing Seabury, St. Paul.
William E. Steele, Minneapolis.
Judson L. Wicks, Minneapolis.
James T. Wyman, Minneapolis.

MISSISSIPPI.

Board of Trade, Jackson.
Citizens of Bay St. Louis (petition).
Citizens of Durant (petition).
Citizens of Meriden (petition).
Citizens of White Apple (petition).
Citizens of Yazoo City (petition).
Mississippi Bar Association, Jackson.

Roswell V. Booth, Vicksburg.
William C. Craig, Yazoo City.
Aug. Keller, Bay St. Louis.
Jno. McC. Martin, Port Gibson.
T. Marshall Miller, Jackson.

MISSOURI.

Associated Wholesale Grocers of St. Louis.
Business Men's Club, Joplin.
Cape Girardeau Board of Trade.
Citizens of Barkersville (petition).
Citizens of Barnetts (petition).
Citizens of Boone County (petition).
Citizens of Charleston (petition).
Citizens of Fulton (petition).
Citizens of Ghermauville (petition).

MISSOURI—Continued.

Citizens of Harrisonville (petition).
Citizens of Joplin (2 petitions).
Citizens of Kansas City (2 petitions).
Citizens of Kirkwood (petition).
Citizens of Lancaster (petition).
Citizens of Olean (petition).
Citizens of Moselle (petition).
Citizens of Richland (petition).
Citizens of Rocheport (petition).
Citizens of St. Joseph (petition).
Citizens of St. Louis (19 petitions).
Citizens of St. Thomas (petition).
Citizens of Sedalia (2 petitions).
Citizens of Varner (petition).
Citizens of Warrenton (petition).
Citizens of Whiting (petition).
Kansas City Commercial Club.
Kansas City Paint, Oil and Varnish Club.
Lawyers of Sedalia (petition).
Mechanics' Exchange, St. Louis.
Merchants' Exchange, St. Louis (2 resolutions, 1889, 1890).
Mexican and Spanish-American Commercial Exchange, St. Louis.
Missouri Bar Association, St. Louis.
St. Charles Board of Trade.
St. Louis Furniture Board of Trade.
St. Louis Paint, Oil and Drug Club.
Springfield Board of Trade.
Young Men's Commercial Club, Moberly.

Leon J. Albert, Cape Girardeau.
Rufus E. Anderson, Hannibal.
James O. Broadhead, St. Louis.
Robert S. Brookings, St. Louis.
Adolphus Busch, St. Louis.
Charles A. Cox, St. Louis.
Samuel Cupples, St. Louis.
Frank Gaiennie, St. Louis.
Baldwin B. Gill, Chillicothe.
Noah M. Givan, Harrisonville.
Joseph W. Goddard, St. Louis.
Henry S. Hopkins, St. Louis.
Anthony Ittner, St. Louis.
Geo. P. B. Jackson, Sedalia.
John A. Lee, St. Louis.
Charles A. McCann, Springfield.
Francis J. McMaster, St. Louis.
James M. Nave, Kansas City.
Samuel M. Nave, St. Joseph.
Cyrus Newkirk, Sedalia.
Peter Nicholson, St. Louis.
John C. O'Keefe, Moberly.
Ferdinand W. Risque, St. Louis.
William E. Schweppe, St. Louis.
D. Howell Shields, Hannibal.
Edward C. Simmons, St. Louis.
Gerrit H. Ten Broek, St. Louis.
Jay L. Torrey, St. Louis.
Cyrus P. Walbridge, St. Louis.
Robert F. Walker, St. Louis.
Benjamin W. Zimmerman, Sedalia.

MONTANA.

Chamber of Commerce, Helena.
Charles K. Cole, Helena.

NEBRASKA.

Citizens of Beatrice (petition).
Citizens of Lincoln (2 petitions).
Citizens of Omaha (8 petitions).
Citizens of St. Paul (petition).
Citizens of South Omaha (petition).
Lincoln Board of Trade.
Lincoln Retail Grocers' Association.
Nebraska Paint, Oil and Glass Club, Omaha.
Nebraska State Business Men's Association
Lincoln Branch.
Omaha Board of Trade.
Andrew J. Conlee, Beatrice.
Frederick B. Kennard, Omaha.
Rollaud H. Oakley, Lincoln.

Bodies which have been reported as being in favor of bankruptcy legislation, etc.—Cont'd.

NEVADA.

Citizens of Mineral Hill (petition).

NEW HAMPSHIRE.

Concord Commercial Club.
Manchester Board of Trade.
Nashua Board of Trade.

NEW JERSEY.

Asbury Park Board of Trade.
Board of Trade of Jersey City.
Brewers' Association of New Jersey, Newark.
Citizens of Jersey City (petition).
Retail Merchants' Association, Atlantic City.

Anthony W. Dimock, Elizabeth.
Leonard J. Gordon, Jersey City.
J. Frank Fort, Newark.

NEW MEXICO.

Santa Fé Board of Trade.

Charles M. Creamer, Santa Fé.

NEW YORK.

Amsterdam Board of Trade.
Brewers' Association, Buffalo.
Buffalo Fire Underwriters' Association.
Buffalo Merchants' Exchange.
Camara de Comercio Española en Nueva York.
Chamber of Commerce of the State of New York,
New York City.
Cigar Manufacturers of the United States, New
York City.
Citizens of Albany (petition).
Citizens of Brooklyn (petition).
Citizens of Buffalo (2 petitions).
Citizens of Clyde (petition).
Citizens of Newburgh (petition).
Citizens of New York City (14 petitions).
Citizens of Rochester (3 petitions).
Citizens of Syracuse (petition).
Citizens of Troy (petition).
Citizens of Utica (3 petitions).
Clothiers' Association of New York City.
Consolidated Stock and Petroleum Exchange,
New York City.
Dry Goods Importers' Association, New York City.
Elmira Board of Trade.
Italian Chamber of Commerce, New York City.
Lumber Exchange, Buffalo.
Mercantile Exchange, New York City.
National Association of Builders (fifth annual
meeting), New York City.
New York Board of Trade and Transportation,
New York City (2 resolutions, 1889, 1890).
New York Jewelers' Board of Trade, New York
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New York State Wholesale Grocers' Association,
Elmira.
New York Wholesale Ice Dealers' Association.
Oneonta Board of Trade.
Paint, Oil and Varnish Club, New York City.
Retail Grocers' Association, Buffalo.
Rochester Chamber of Commerce.
Sing Sing Board of Trade.
Stationers' Board of Trade, New York City.
Warsaw Board of Trade.

Herbert P. Bissell, Buffalo.
James M. Constable, New York City.
Joseph Fahys, New York City.
Patrick Farrelly, New York City.
John C. Graves, Buffalo.
David Hirsch, New York City.
John H. Inman, New York City.
Alexander E. Orr, New York City.
George L. Pease, New York City.
Edward W. Peck, Rochester.
George Sandrock, Buffalo.
Charles S. Smith, New York City.

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William Steinway, New York City.
Francis B. Thurber, New York City.
Walter P. Warren, Troy.
Alfred R. Whitney, New York City.
Morris S. Wise, New York City.

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Citizens of Raleigh (2 petitions).
New Berne Cotton and Grain Exchange.

Thomas B. Keogh, Greensborough.
Samuel W. Smallwood, New Berne.

NORTH DAKOTA.

Citizens of Grand Forks (petition).
Fargo Board of Trade.

Anson S. Brooks, Grand Forks.
Addison W. Clark, Grand Forks.
John W. Von Nieda, Fargo.

OHIO.

Akron Board of Trade.
Ashtabula Board of Trade.
Board of Trade, Gallipolis.
Board of Trade, Nelsonville.
Builders' Exchange, Cincinnati.
Cincinnati Board of Trade and Transportation.
Cincinnati Clothiers' Association.
Cincinnati Retail Grocers' Association.
Citizens of Bellaire (petition).
Citizens of Cincinnati (2 petitions).
Citizens of Cleveland (2 petitions).
Citizens of Clyde (petition).
Citizens of Columbus (2 petitions).
Citizens of Dayton (petition).
Citizens of Findlay (2 petitions).
Citizens of Fostoria (petition).
Citizens of Gallipolis (petition).
Citizens of Hamilton (petition).
Citizens of Ironton (petition).
Citizens of Kent (petition).
Citizens of Logan (petition).
Citizens of Massillon (2 petitions).
Citizens of Nelsonville (petition).
Citizens of Orbiston (petition).
Citizens of Zanesville (petition).
Cleveland Retail Grocers' Association.
Defiance Board of Trade.
Findlay Board of Trade.
National Paint, Oil, and Varnish Association (an-
nual session 1890), Cincinnati.
Piqua Board of Trade and Improvement Associa-
tion.
Produce Exchange, Toledo.
Retail Merchants' Protective Association, New
Philadelphia.
Sandusky Business Men's Association.
Springfield Board of Trade.
Tiffin Board of Trade.

Burr W. Blair, Cincinnati.
Lee H. Brooks, Cincinnati.
Cornelius A. Brouse, Akron.
John H. Doyle, Toledo.
Richard Dymond, Cincinnati.
Lowe Emerson, Cincinnati.
Clinton D. Firestone, Columbus.
James M. Glenn, Cincinnati.
Justus Goebel, Cincinnati.
Lawrence Grace, Cincinnati.
Robert J. Harrison, Cincinnati.
Anson Hurd, Findlay.
John C. Hutsinpillar, Gallipolis.
Arthur McAllister, Cleveland.
Joshua Nickerson, New Burlington.
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OHIO—Continued.

John S. Kountz, Toledo.
Alfred Seasongood, Cincinnati.
John N. Stewart, Ashtabula.
Jacob W. Stoody, New Philadelphia.
John L. Vance, Gallipolis.
William W. Woodward, Sandusky.
Charles J. Yingling, Tiffin.

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Astoria Chamber of Commerce.
Board of Trade of Portland.
Chamber of Commerce, Portland.
Citizens of Astoria (2 petitions).
Citizens of Fostoria (petition).
Merchants' Protective Union, Portland.
Oregon Immigration Board, Portland.

John Q. A. Bowlby, Astoria.
Charles H. Dodd, Portland.
Charles M. Donaldson, Baker City.
Donald Macleay, Portland.

PENNSYLVANIA.

American Association of Flint and Lime. Glass Manufacturers (2 resolutions, 1889, 1890), Pittsburgh.

Board of Trade of Wilkes Barre.
Business firms, Philadelphia (petition).
Citizens of Hazleton (petition).
Citizens of Lovelton (petition).
Citizens of Newcastle (petition).
Citizens of Philadelphia (10 petitions).
Citizens of Pittsburgh (3 petitions).
Citizens of Reading (2 petitions).
Citizens of Scranton (petition).
Citizens of Sharpsburgh (petition).
Citizens of Tarentum (petition).
Commercial Exchange, Philadelphia.
Grocers and Importers' Exchange, Philadelphia.
Lancaster Board of Trade.
Paint and Drug Club, Pittsburgh.
Philadelphia Board of Trade.
Paint Club of Philadelphia.
Philadelphia Drug Exchange.
Philadelphia Produce Exchange.
Scranton Board of Trade.
Shoe Exchange of Philadelphia.
Titusville Board of Trade.

Theodore H. Bechtel, Philadelphia.
Frederick Fraley, Philadelphia.
Henry A. Fry, Philadelphia.
Edward H. Hance, Philadelphia.
Benjamin S. Janney, jr., Philadelphia.
John A. Price, Scranton.
G. Murray Reynolds, Wilkes Barre.
Daniel C. Ripley, Pittsburgh.
William T. Smith, Scranton.
Henry M. Steel, Philadelphia.
Daniel M. Thomas, Columbia.
Samuel Wagner, Philadelphia.
Elias Z. Wallower, Harrisburg.

RHODE ISLAND.

Board of Trade, Providence.
Citizens of Providence (petition).
Manufacturing Jewelers' Board of Trade, Providence.
Mechanics' Exchange, Providence.

James Murray, Woonsocket.
Joseph U. Starkweather, Providence.

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Charleston Chamber of Commerce.
Citizens of Cheraw (petition).

Thomas C. Gower, Greenville.
Samuel Y. Tupper, Charleston.

SOUTH DAKOTA.

Citizens of Rapid City (petition).
Commercial Club, Sioux Falls.

Robert F. Bacon, Rapid City.
James Halley, Rapid City.
Hosmer H. Keith, Sioux Falls.

TENNESSEE.

Chattanooga Board of Trade.
Citizens of Chattanooga (petition).
Citizens of Cleveland (petition).
Citizens of Jackson (petition).
Citizens of Knoxville (petition).
Citizens of Memphis (petition).
Citizens of Milan (petition).
Citizens of Nashville (petition).
Jackson Board of Trade.
Knoxville Board of Trade.

Alexander A. Arthur, Knoxville.
Zeboim C. Patten, Chattanooga.
Robert F. Patterson, Memphis.
Joseph F. Shipp, Chattanooga.

TEXAS.

Austin Board of Trade.
Bankrupts, bankers, contractors, farmers, judges, lawyers, politicians, retailers, and wholesalers, Dallas (petition).
Citizens of Dallas (2 petitions).
Citizens of Del Rio (petition).
Citizens of Denison (petition).
Citizens of Ellis County (petition).
Citizens of Galveston (4 petitions).
Citizens of Jacksonville (petition).
Citizens of Navasota (2 petitions).
Citizens of Rochdale (petition).
Citizens of San Angelo (petition).
Citizens of San Antonio (petition).
Citizens of Terrill (petition).
Citizens of Waco (petition).
Citizens of Waxahachie (petition).
Citizens of Zapp (petition).
Cleburne Board of Trade.
Dallas Board of Trade.
Dallas Fire Underwriters (petition).
El Paso Board of Trade.
Henrietta Board of Trade.
San Antonio Board of Trade.
The Builders' Exchange of Dallas.

Oliver P. Bowser, Dallas.
Richard D. Coughanour, Dallas.
Joseph Deutschman, Texarkana.
William H. Harrell, Dallas.
William Heuermann, San Antonio.
Christopher W. Mertz, Cleburne.
Joseph F. Meyer, Houston.
Julius Runge, Galveston.

UTAH.

Henry W. Lawrence, Salt Lake.

VERMONT.

Citizens of St. Albans (petition).

Andrew J. Sibley, Montpelier.
Urban A. Woodbury, Burlington.

VIRGINIA.

Board of Trade of the City of Lynchburgh.
Citizens of Lynchburgh (petition).
Citizens of Roanoke (petition).
Real Estate Exchange, Norfolk.
Richmond Chamber of Commerce.
Staunton Chamber of Commerce.

A. Berkeley Carrington, Danville.
Benjamin F. Johnson, Richmond.

Bodies which have been reported as being in favor of bankruptcy legislation, etc.—Cont'd.

WASHINGTON.

Seattle Chamber of Commerce.
Tacoma Chamber of Commerce.
Walla Walla Board of Trade.

Samuel Collyer, Tacoma.

WEST VIRGINIA.

Board of Trade, Martinsburgh.
Huntington and Cabell County Industrial and De-
veloping Association.
Wheeling Chamber of Commerce.
Citizens of Wellsburg (petition).
Citizens of Wheeling (petition).

E. Boyd Faulkner, Martinsburgh.
Jesse M. Layne, Huntington.
Hullihen Quarrier, Wheeling.

WISCONSIN.

Association for the advancement of Milwaukee.
Business Mens' Association, Green Bay.

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Chamber of Commerce of the City of Milwaukee.
Citizens of Arcadia (petition).
Citizens of Milwaukee (withdrawal from protest
and petition in favor of bill).
Citizens of Milwaukee (6 petitions).
Citizens of Neenah (petition).
La Crosse Board of Trade (2 resolutions, 1889.
1890).
Paint, Oil and Drug Club, Milwaukee.
Milwaukee Brewers' Association.

Frederick W. Inbusch, Milwaukee.
Thomas L. Kelly, Milwaukee.
Frank McDonough, Eau Claire.
Henry M. Mendel, Milwaukee.
Simon J. Murphy, jr., Green Bay.
John R. Reiss, Sheboygan.
John M. Smith, Green Bay.
David W. Starkey, Appleton.
John E. Thomas, Sheboygan Falls.

WYOMING.

Citizens of Sun Dance (petition).

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IN THE SENATE OF THE UNITED STATES.

FEBRUARY 26, 1891.—Submitted and ordered to be printed.

Mr. DOLPH submitted the following

RESOLUTION :

Resolved, That the Secretary of War be directed to furnish to the Senate such information as he may possess concerning the progress and condition of the work of the construction of a canal and locks at the Cascades of the Columbia River in the State of Oregon, the estimated cost of the completion of the same, and the time which will be required for such completion, together with copies of all reports of the engineers in charge of the work since his annual report concerning the same.

IN THE SENATE OF THE UNITED STATES.

FEBRUARY 26, 1891.—Submitted and ordered to be printed.

Mr. ALLISON submitted the following

RESOLUTION:

Resolved, That the Secretary of the Treasury be directed to transmit to the Senate a list of all claims allowed by the several accounting officers of the Treasury Department under appropriations the balances of which have been exhausted or carried to the surplus fund under the provisions of section 5 of the act of June 20, 1874, since the allowance of those already transmitted to Congress during the present session, and also a list of judgments of the Court of Claims requiring an appropriation at the present session, not already transmitted.

○

IN THE SENATE OF THE UNITED STATES.

FEBRUARY 26, 1891.—Submitted and ordered to be printed.

Mr. HOAR submitted the following

RESOLUTION :

Resolved, That the Committee on Privileges and Elections be directed to inquire and report at the next session of Congress at what time the compensation of Senators from newly admitted States ought to begin.

C

1874

1874

THE STATE OF NEW YORK

IN SENATE

JANUARY 1, 1874

REPORT

OF THE COMMISSIONERS OF THE LAND OFFICE

IN RESPONSE TO A RESOLUTION PASSED BY THE SENATE

IN THE SENATE OF THE UNITED STATES.

FEBRUARY 27, 1891.—Presented, referred to the Committee on Privileges and Elections, and ordered to be printed.

Mr. STEWART presented the following

MEMORIAL OF WILLIAM H. CLAGETT, CLAIMING TO BE ELECTED A SENATOR FROM THE STATE OF IDAHO FOR THE TERM OF SIX YEARS COMMENCING MARCH 4, 1891, TOGETHER WITH A PAPER PURPORTING TO BE A CERTIFICATE OF ELECTION BY THE LEGISLATURE OF SAID STATE, AND OTHER PAPERS.

To the President of the Senate of the United States :

This is to certify that at a meeting of the joint assembly of the members of the two houses of the legislature of the State of Idaho, duly convened at twelve o'clock meridian, on Wednesday, the eleventh day of February, A. D. 1891, in the hall of the house of representatives in the capitol for the purpose of electing a United States Senator from the State of Idaho for the term of six years beginning March fourth, A. D. 1891, a majority of the members elected to each house being present, the journal of each house for the preceding day was read, and it appearing therefrom that on Tuesday, the tenth day of February, A. D. 1891, each house openly, by a *viva voce* vote of each member present, a majority of each house being present and voting, voted for a Senator in Congress from said State to fill said term, and that the same person had not received a majority of the votes in each house, the joint assembly thereupon proceeded to choose, by a *viva voce* vote of each member present, a person for Senator, and William H. Clagett, a native-born citizen of the United States, over thirty years of age, and an inhabitant of said State, received a majority of all the votes of said joint assembly, a majority of all the members elected to both houses being present and voting, and was duly elected a United States Senator from the State of Idaho for the term of six years beginning on March fourth, A. D. 1891, to succeed William J. McConnell.

In testimony whereof, I have hereunto set my hand and caused to be affixed the great seal of the State.

Done at the capitol, in the city of Boise, the capital of Idaho, this fourteenth day of February, in the year of our Lord one thousand eight hundred and ninety-one, and of the Independence of the United States of America the one hundred and fifteenth.

NORMAN B. WILLEY,
Governor.

UNITED STATES OF AMERICA, *State of Idaho*, ss :

I, Norman B. Willey, governor of the State of Idaho, do hereby certify that I signed the foregoing certificate of the election of William H. Clagett as a United States Senator on the fourteenth day of Febru-

ary, A. D. 1891, as governor of said State, and that my signature thereto is genuine; and that I thereupon presented the same to A. J. Pinkham, the secretary of State for said State and requested him to countersign said certificate and attach the great seal of the State thereto, of which he is the legal custodian, and that he refused and still refuses so to do.

Witness my hand at the capitol in Boisé City, this fourteenth day of February, A. D. 1891.

NORMAN B. WILLEY,
Governor.

STATE OF IDAHO, *County of Ada*, ss:

Be it known, that on the fourteenth day of February, in the year of our Lord one thousand eight hundred and ninety-one, personally appeared before me, Jonas W. Brown, a notary public in and for said county, duly commissioned and sworn and acting as such, Norman B. Willey, the governor of the State of Idaho, personally known to me to be the person who executed the two foregoing certificates (and whose signatures thereto are personally known to me to be genuine), and he acknowledged to me that he executed the same and each of said certificates, and that his signature to each of said certificates is genuine.

In witness whereof, I have hereunto set my hand and affixed my official seal, at my office in Boisé City, in said county of Ada, the day and year in this certificate above written.

[SEAL.]

JONAS W. BROWN,
Notary Public.

STATE OF IDAHO, OFFICE OF THE SECRETARY.

UNITED STATES OF AMERICA, *State of Idaho*, ss:

I, A. J. Pinkham, secretary of the State of Idaho, do hereby certify that Jonas W. Brown, whose name is subscribed to the annexed instrument, was at the time of subscribing the same a notary public within and for the county of Ada, in the State of Idaho, duly appointed, qualified, and acting as such officer, authorized by the laws of the State to issue the same.

I further certify that the impression of seal to said certificate is a genuine impression of the seal of said Jonas W. Brown, and that the signature to said certificate affixed is in the handwriting of said officer.

In testimony whereof I have hereunto set my hand and affixed the great seal of the State.

Done at Boisé City, the capital of Idaho, this 14th day of February, A. D. 1891.

[SEAL.]

A. J. PINKHAM,
Secretary of Idaho.

Section 15, article IV of the constitution of the State of Idaho, provides:

* * * The seal of the Territory of Idaho as now used shall be the seal of the State until otherwise provided by law.

IN THE SENATE OF THE UNITED STATES OF AMERICA.

MEMORIAL OF WILLIAM H. CLAGETT, ADDRESSED TO THE SENATE
OF THE UNITED STATES.

SHELLABARGER & WILSON,
Attorneys for Memorialist.

To the Senate of the United States :

Your memorialist, the undersigned, William H. Clagett, a citizen of the United States, and a citizen and resident of the State of Idaho, respectfully submits to the Senate the following memorial, and the exhibits and accompanying documents therein referred to, in support of his right to a seat as Senator from the State of Idaho for the term beginning March 4, 1891.

The facts in the case, and also the provisions of law affecting this contest, may be summarized as follows:

The State of Idaho was admitted into the Union by act of Congress of date July 3, 1890. Previously to the enactment of said law admitting the State the people of the Territory had adopted the constitution which is referred to in said act of Congress admitting the State. The fourteenth section of article 21 of said constitution so adopted by the people of the Territory contains the following provision:

Within 10 days after the organization of the legislature both houses of the legislature, shall then and there proceed to elect, as provided by law, two Senators of the United States for the State of Idaho. At said election the two persons who shall receive the majority of all the votes cast by said senators and representatives shall be elected as such United States Senators, and shall be so declared by the presiding officer of the said joint session. The presiding officers of the senate and house shall issue a certificate to each of said senators, certifying his election, which certificate shall also be signed by the governor and attested by the secretary of state.

The said act of Congress admitting the State into the Union, including the recitals, reads as follows:

Whereas people of the Territory of Idaho did, on the 4th day of July, 1889, by a convention of delegates called and assembled for that purpose, form for themselves a constitution, which constitution was ratified and adopted by the people of said Territory at an election held therefor on the first Tuesday of November, 1889, which constitution is republican in form, and is in conformity with the Constitution of the United States; and

Whereas said convention and the people of said Territory have asked the admission of said Territory into the Union of States on an equal footing with the original States in all respects whatever: Therefore

Be it enacted, etc., That the State of Idaho is hereby declared to be a State of the United States of America, and is hereby declared to be admitted into the Union on an equal footing with the original States in all respects whatever; and that the constitution which the people of Idaho have formed for themselves be, and the same is hereby, accepted, ratified, and confirmed,

Section 20 of said act admitting the State reads as follows :

SEC. 20. That the legislature of the said State may elect two Senators of the United States, as provided by the constitution of the said State ; and the senators and representatives of said State shall be entitled to seats in Congress, and to all the rights and privileges of Senators and Representatives of other States in the Congress of the United States.

Sections 14, 15, 16, 17, 18, and 19, of the Revised Statutes of the United States, read as follows :

SEC. 14. The legislature of each State which is chosen next preceding the expiration of the time for which any Senator was elected to represent such State in Congress shall, on the second Tuesday after the meeting and organization thereof, proceed to elect a Senator in Congress.

SEC. 15. Such election shall be conducted in the following manner: Each house shall openly, by a *viva voce* vote of each member present, name one person for Senator in Congress from such State, and the name of the person so voted for who receives a majority of the whole number of votes cast in each house shall be entered on the journal of that house by the clerk or secretary thereof; or if either house fails to give such majority to either person on that day, the fact shall be entered on the journal. At 12 o'clock meridian of the day following that on which proceedings are required to take place as aforesaid the members of the two houses shall convene in joint assembly, and the journal of each house shall then be read, and if the same person has received a majority of all the votes in each house he shall be declared duly elected Senator. But if the same person has not received a majority of the votes in each house, or if either house has failed to take proceedings as required by this section, the joint assembly shall then proceed to choose, by a *viva voce* vote of each member present, a person for Senator, and the person who receives the majority of all the votes of the joint assembly, a majority of all the members elected to both houses being present and voting, shall be declared duly elected. If no person receives such majority on the first day, the joint assembly shall meet at 12 o'clock meridian of each succeeding day during the session of the legislature, and shall take at least one vote until a Senator is elected.

SEC. 16. Whenever on the meeting of the legislature of any State a vacancy exist in the representation of such State in the Senate, the legislature shall proceed on the second Tuesday after meeting and organization to elect a person to fill such vacancy in the manner prescribed in the preceding section for the election of a Senator for the full term.

SEC. 17. Whenever during the session of the legislature of any State a vacancy occurs in the representation of such State in the Senate similar proceedings to fill such vacancy shall be had on the second Tuesday after the legislature has organized and has notice of such vacancy.

SEC. 18. It shall be the duty of the executive of the State from which any Senator has been chosen to certify his election, under the seal of the State, to the President of the Senate of the United States.

SEC. 19. The certificate mentioned in the preceding section shall be countersigned by the secretary of state of the State.

On Monday, December 8, 1890, the legislature of the State of Idaho met pursuant to the proclamation of the governor, as required by section 14, article XXI, of the constitution of the State.

On the first day of the session, the house of representatives elected a speaker and principal officers, and on Tuesday, December 9, 1890, it completed the election of its officers; and thereafter and on that day all of its officers were sworn and entered upon their respective duties for the first time; and thereupon the house duly notified the senate of its organization.

On Monday, December 8, 1890, the senate took no steps toward electing any of its officers, but elected them all on December 9, 1890, and thereupon notified the house of representatives of its organization.

So that the 9th day of December, 1890, was the day on which the legislature was organized, within the sense of the word "organized," as found in said above clause of section 14, article XXI, of the constitution of the State, and in sections 14 and 15 of the Revised Statutes.

As said section 14, in the above quoted clause, provides that within ten days after the organization of the legislature both houses shall

then and there proceed to elect, as provided by law, two Senators of the United States for the State of Idaho, the said two houses, in separate meeting prior to the 16th day of December, 1890, and within the ten days aforesaid, passed a concurrent resolution in words and figures as follows :

Resolved by the senate, the house concurring, That the senate and house of representatives proceed to elect, as provided by law, United States Senators at the hour of 12 o'clock m. on Tuesday, the 16th day of December, 1890.

And the two houses, on the said Tuesday, December 16, 1890, pursuant to said concurrent resolution, did proceed to vote for a United States Senator, without a choice being had. On the next day, December 17, 1890, pursuant to the terms of said concurrent resolution and the provisions of said constitution of the State and the admission act, and of said section 15 of the Revised Statutes of the United States, the two houses met together in joint assembly and took two votes for a United States Senator, and failed to elect.

On the next day, December 18, 1890, the two houses again met in joint assembly, whereupon Senator Gunn offered in joint assembly the following resolution :

Resolved by the joint assembly of the senate and house of representatives of the legislature of the State of Idaho, That we proceed to elect two United States Senators to fill existing vacancies; and that after such election we immediately proceed to elect one United States Senator to fill the vacancy occurring March 4, 1891.

This resolution, offered for the first time in joint assembly, was strongly opposed, so far as that part of the resolution is concerned which provided for the election of a third Senator immediately after the election of the two to fill existing vacancies, and for whose election special provision had been made by the constitution of the State, the admission act and the concurrent resolution passed by the two houses acting separately, and upon which the joint assembly had convened. The resolution was adopted by a vote of 29 to 25, all the members elected to both branches of the legislature being present and voting on the resolution; it thus requiring 28 to constitute a majority of the joint convention, and to make an election.

Whilst the said resolution offered by Senator Gunn was pending Senator Gray offered an amendment thereto, as follows :

I move to amend the resolution to read as follows: "That we do now proceed to elect one Senator from north Idaho, and then proceed to elect one senator from south Idaho, to fill vacancies now existing."

This amendment was declared out of order by the Chair.

Senator Gray then withdrew his amendment, but offered the following as a substitute for the original resolution of Senator Gunn :

I move that the resolution read as follows: That we proceed to elect two Senators to fill the vacancies now existing.

Which substitute was rejected by the joint assembly, the vote standing 25 for and 29 against.

The question then recurred on the adoption of the original resolution by Senator Gunn, and the same was adopted by a vote of 29 ayes and 25 nays.

The joint assembly then, under the direction of the president, proceeded to the election of one United States Senator to fill an existing vacancy by a *viva voce* vote of each member present, and thereupon, on the first ballot, George L. Shoup was elected to fill one of the existing vacancies (he being then governor of the Territory and elected upon the Republican platform, hereinafter referred to), the vote standing 31

for said Shoup, 12 for William H. Clagett, 10 for Alexander A. Mayhew (Democrat), and 1 for W. J. McConnell.

Immediately upon the announcement of the vote a motion was made by Mr. Emery to adjourn, which motion was lost by a vote of 23 ayes to 30 nays.

The joint assembly then proceeded to the election of a United States Senator to fill the other existing vacancy, which vote resulted in the election of W. J. McConnell, who received 29 votes, William H. Clagett receiving 15, and George Ainslie (Democrat) receiving 10.

Immediately upon the announcement of this vote Senator Gray moved to adjourn, which was voted down by a vote of 25 ayes to 29 nays.

The joint assembly then proceeded, immediately after the election of the two Senators to fill existing vacancies, and after voting down said motion to adjourn, and as provided in the resolution of Senator Gunn, to elect a United States Senator whose term should begin March 4, 1891.

Prior to voting for this third Senator, by request of Senator Gray, who acted as spokesman of the entire minority, his protest to the election of a third Senator was entered on the journal.

The joint assembly then immediately proceeded to vote for a third Senator for the term beginning March 4, 1891, upon the expiration of the term of such one of the two Senators, theretofore just elected, as should draw the short term ending March 3, 1891.

On this ballot Fred. T. Dubois received 32 votes, William H. Clagett 12, and John Hailey, Democrat, 10. Immediately upon the announcement of the vote the joint assembly, by motion, dissolved.

On December 29, 1890, the credentials of the said George L. Shoup, William J. McConnell, and Fred. T. Dubois, were formally presented to the Senate by the Vice-President; which credentials are as follows:

EXECUTIVE OFFICE, STATE OF IDAHO,
Boisé City, Idaho, December 19, 1890.

To the President of the Senate of the United States:

SIR: Whereas it is certified to me by the presiding officers and clerks of the senate and house of representatives of the first session of the legislature of the State of Idaho that in joint session of the senate and house of representatives George L. Shoup was elected a Senator of the United States for the State of Idaho:

Now, therefore, I, George L. Shoup, governor of the State of Idaho, do hereby certify that at a joint session of the senate and house of representatives of said State, duly convened and held at Boisé City, Idaho, the capital of said State, on the 18th day of December, A. D. 1890, a majority of all the members of the legislature being present and voting, George L. Shoup received a majority of all the votes cast at said joint session for Senator of the United States for the State of Idaho, and was duly elected and so declared elected as said Senator by the presiding officer of said joint session under and by virtue of the provisions of section 14 of article 21 of the constitution of said State and as provided by law

Given under my hand and the seal of the State at Boisé City, Idaho, the day and year first above written.

[SEAL.]

GEO. L. SHOUP, *Governor.*

By the governor:

A. J. PINKHAM,
Secretary of State.

EXECUTIVE OFFICE, STATE OF IDAHO,
Boisé City, Idaho, December 19, 1890.

To the President of the Senate of the United States:

SIR: Whereas it is certified to me by the presiding officers and clerks of the senate and house of representatives of the first session of the legislature of the State of Idaho that in joint session of the senate and house of representatives William J. McConnell was elected a Senator of the United States for the State of Idaho:

Now, therefore, I, George L. Shoup, governor of the State of Idaho, do certify that

at a joint session of the senate and house of representatives of said State, duly convened and held at Boisé City, Idaho, the capital of the State, on the 18th day of December, A. D. 1890, a majority of all the members of the legislature being present and voting, William J. McConnell received a majority of all the votes cast at said joint session for Senator of the United States for the State of Idaho, and was duly elected and so declared elected as said Senator by the presiding officer of said joint session under and by virtue of the provisions of section 14 of article 21 of the constitution of the said State and as provided by law.

Given under my hand and the seal of the State at Boisé City, Idaho, the day and year first above written.

[SEAL.]

GEO. L. SHOUP, *Governor.*

By the governor:

A. J. PINKHAM, *Secretary of State.*

EXECUTIVE OFFICE, STATE OF IDAHO,
Boisé City, Idaho, December 23, 1890.

To the President of the Senate of the United States:

SIR: Whereas it is certified to me by the presiding officers and clerks of the senate and house of representatives of the first session of the legislature of the State of Idaho that, in joint session of the senate and house of representatives, a majority of all the members of both houses being present and voting, Fred T. Dubois was elected a Senator of the United States for the full term commencing March 4, A. D. 1891.

Therefore, I, Norman B. Willey, governor of the State of Idaho, do hereby certify that at a joint session of the senate and house of representatives of said State, duly convened and held at Boisé City, Idaho, the capital of said State, on the 18th day of December, A. D. 1890, a majority of the members of the senate and house of representatives being present and voting, Fred T. Dubois received a majority of all the votes cast at said joint session for Senator for the State of Idaho for the full term commencing March 4, A. D. 1891, and was so duly elected and so declared elected as said Senator for said term by the presiding officer of said joint session, as provided by law.

Given under my hand and the seal of the State of Idaho, at Boisé City, Idaho, the day and year first above written.

[SEAL.]

NORMAN B. WILLEY, *Governor.*

By the governor:

A. J. PINKHAM,
Secretary of State.

Accompanying these certificates and constituting a part of the credentials, was the certificate of the presiding officers of the two houses of the Idaho legislature and the chief clerk thereof, and which said certificate reads as follows:

STATE OF IDAHO, HALL OF THE HOUSE OF REPRESENTATIVES.

This is to certify that at a meeting of the two houses of the legislature of the State of Idaho in joint assembly held on Tuesday, the 18th day of December, A. D. 1890, at noon, a majority of all the members of each house being present and voting, it was found upon examination of the journals of the respective houses that upon Tuesday, the 16th day of December, A. D. 1890, being the second Tuesday after meeting and organization of the legislature, each house had by a *viva voce* vote voted for a United States Senator for the State of Idaho, and that the same person had not received a majority of all the votes cast in each house. Thereupon both houses in joint assembly on Wednesday, the 17th day of December, A. D. 1890, at noon, met and proceeded to ballot for a United States Senator for the State of Idaho, and the same person not receiving a majority of all the votes cast, said joint assembly adjourned and reconvened on Thursday, the 18th day of December, A. D. 1890, at noon, and proceeded to ballot for a United States Senator; whereupon said joint assembly by an open *viva voce* vote of the members present, all the senators and representatives being present and voting, did adopt the following resolution:

Resolved by the joint assembly of the senate and house of representatives of the legislature of the State of Idaho, That we proceed to elect two United States Senators to fill existing vacancies, and that after such election we immediately proceed to elect one United States Senator to fill a vacancy occurring March 4, A. D. 1891.

That thereupon the joint assembly of the legislature of the State of Idaho, every

member of each house being present and voting thereon, proceeded to choose and elect a United States Senator for the State of Idaho by a *viva voce* vote of each member present, and thereupon George L. Shoup received a majority of all the votes of the joint assembly, and was thereupon, by the presiding officer of said joint assembly, declared duly elected a Senator of the United States for the State of Idaho.

Thereupon, all the members of both houses of the legislature of the State of Idaho still being present, said joint assembly forthwith proceeded in the same manner, by *viva voce* vote of each member present, to choose and elect a second United States Senator for the State of Idaho, and then and there William J. McConnell received a majority of all the votes of the joint assembly, and was thereupon, by the presiding officer of said joint assembly, declared duly elected a Senator of the United States for the State of Idaho.

Thereupon, all the members of both houses of the legislature of the State of Idaho still being present, said joint assembly forthwith proceeded in the same manner, by *viva voce* vote of each member present, to choose and elect a United States Senator for the State of Idaho to fill a vacancy occurring March 4, A. D. 1891, and then and there Fred T. Dubois received a majority of all the votes of the joint assembly, and was thereupon by the presiding officer of the joint assembly declared duly elected a Senator of the United States for the State of Idaho for the term to begin March 4, A. D. 1891.

NORMAN B. WILLEY,
President of the Senate.

F. A. FENN,
Speaker of the House of Representatives.

CHARLES H. REED,
Chief Clerk of the House of Representatives.

M. C. ATHEY,
Secretary of the Senate.

Dated Boise City, Idaho, this 19th day of December, A. D. 1890.

These credentials of the three alleged Senators-elect were by order of the Senate, made December 29, 1890, referred to the Committee on Privileges and Elections, and placed on file; which committee, on January 6, 1891, reported that the credentials of George L. Shoup and William J. McConnell were properly certified, and entitled them to seats in the United States Senate; and thereupon they were respectively sworn into office.

On the same date the said committee, reporting on the credentials of the said Fred T. Dubois reported that it is the usage of the Senate to consider any question that may arise upon the credentials of a Senator at the session during the term at which the Senator is elected; and no reason appears for a departure from that usage in the present case; and they therefore recommend that the credentials be placed on file. (See Congressional Record, January 6, 1891, p. 958.)

Going back now for a moment to the above-quoted certificates by Norman B. Willey, president of the senate, Frank A. Fenn, speaker of the house of representatives, Charles H. Reed, chief clerk of the house of representatives, and M. C. Athey, secretary of the senate, such certificates, so far as they relate to the two Senators elected to fill vacancies, being the ones provided for in the last clause of said section 14, article 21, of the constitution of Idaho, are alleged to be incorrect in point of fact (as appears by the certified copies of the journals now on file with the committee, and affidavits hereto attached) in the following particulars:

(1) That the 16th day of December, A. D. 1890, was not the second Tuesday after the meeting and organization of the legislature, but was the first Tuesday. The following facts appear by the journal of the legislature, which has been above referred to, bearing upon the matter as to when the organization of the legislature was complete, in the sense of the word "organization," as found in section 14, article 21 of the constitution.

On Monday, December 8th, the first day of the session, the house of

representatives elected its speaker, sergeant-at-arms, and principal recording officer, namely, the clerk; and, on Tuesday, December 9, 1890, it completed the election of all its officers; and thereafter, and on that day, to wit: Tuesday, December 9, all of its officers were sworn, and entered upon their respective duties for the first time; and thereupon, on the same day, the house duly notified the senate of its organization.

On Monday, December 8, 1890, the members of both houses qualified by being sworn into office, but the senate took no steps toward electing any of its officers, its presiding officer being the lieutenant governor, who, under the constitution of the State, was *ex officio* president of the senate; but, on December 9, 1890, the senate elected all its officers, excepting a presiding officer, namely: its sergeant-at-arms, chief clerk, and the minor officers connected with that body; and thereupon, to wit, upon December the 9th, notified the house of representatives of its organization.

It thus appearing conclusively by the records of the two houses that no organization of the two houses of legislature, as such, was complete until Tuesday, December 9, it results that the second Tuesday after such organization was effected fell upon the 23d day of December, and not upon the 16th.

This is the first inaccuracy in point of fact contained in said certificate, and is a vital one.

(2) It is not correct, as stated in said paper accompanying the credentials of Fred T. Dubois, that it was ascertained on the 18th day of December, 1890, from an inspection of the journals of the respective houses, that Tuesday, December 16, A. D. 1890, was the second Tuesday after the meeting and organization of the legislature, for the reason that the journals aforesaid show conclusively to the contrary.

(3) It is not correct, as stated in said paper, that the journals of said houses showed that on the second Tuesday after the meeting and organization of the legislature, each house had, by a *viva voce* vote, voted for a United States Senator for the State of Idaho, and that the same person had not received a majority of the votes cast in each house, as the journals of the two houses show conclusively that this *viva voce* vote taken in the two houses acting separately, was taken on Tuesday, December 16, the same being the first Tuesday after the organization of the legislature, and not the second; and the entries as contained in the journals of the two houses relating to the organization thereof, are true in fact, and the recitals in said paper above stated are not correct.

Within three or four days after the 18th of December, 1890, twenty-three members of the legislature signed a protest against allowing the Hon. Fred T. Dubois to take his seat as a Senator from the State of Idaho; and which protest, together with the copy of the journal of the two houses of legislature, containing all entries relating to the organization of the two houses, and the proceedings resulting in the alleged election of the Hon Fred T. Dubois as United States Senator, were transmitted to the Senate of the United States in the month of January, 1891; and this protest of members, and a certified copy of the journals of the two houses, now on file with the committee on privileges and elections of the senate are hereby referred to, and made part of this memorial.

On January —, 1891, when the two Senators elected to fill existing vacancies, drew for terms, Senator William J. McConnell drew the term ending March 3, 1891; and thereafter, to wit, on the 6th day of

February, 1891, a joint and concurrent resolution was introduced in the State senate, which is in words and figures as follows:

Whereas, the present session of the legislature was organized on Tuesday, December 9, 1890; and

Whereas, the State constitution and the admission act required that two United States Senators should be elected within ten days after the organization of the legislature; and

Whereas, on Tuesday, the 16th day of December, 1890, the legislature, pursuant to the requirements of the constitution and admission act, voted for a United States Senator in the two houses, acting separately, and thereafter, as provided by law, met on December 17 in joint assembly and voted for a United States Senator, and thereafter, on December 18, 1890, again met in joint assembly and within ten days after its organization elected, in the manner provided by law, the Hons. George L. Shoup and William J. McConnell, United States Senators; and

Whereas, the legislature thereupon immediately proceeded to vote for Hon. Fred T. Dubois for the term ending March 4, 1891, in advance of the drawing for terms by the two Senators elect, in advance of the time fixed by law, without first voting in the two houses acting separately, and against the protest of members of the joint assembly; and

Whereas, upon full consideration of the facts, it is the opinion of the legislature that if the alleged election of said Hon. Fred T. Dubois is not void there is at least grave doubt as to its validity; therefore

Resolved by the Senate (the House of Representatives concurring). That at the hour of 12 o'clock meridian of the first legislative day after the passage of this resolution, the legislature will proceed to elect a United States Senator to succeed Hon. William J. McConnell, for the term beginning March 4, 1891, and that such election shall be conducted in all respects in the manner provided in section 15 of the Revised Statutes of the United States.

This resolution passed the Senate on the same day, and was concurred in by the House of Representatives on the 9th day of February, 1891. At 12 o'clock meridian, February 10, 1891, in pursuance of said concurrent resolution, the two houses voted separately for United States Senator for the term beginning March the 4th, 1891, without an election being had.

On the next day, at 12 o'clock meridian, the two houses met in joint assembly, a majority of all the members elected to each house of the legislature being present and voting, and voted for a United States Senator as the successor of said William J. McConnell for the term beginning March 4, 1891, and William H. Clagett received 28 votes, being a majority of all the members elected to both houses of the legislature, and was thereupon, by the presiding officer of the joint assembly, declared duly elected, as will appear by duly certified copies of the journals of the two respective houses filed with the committee.

That on February the 14th, 1891, the said William H. Clagett received the following certificate of election:

This to certify that at a meeting of the joint assembly of the members of the two houses of the legislature of the State of Idaho, duly convened at twelve o'clock meridian on Wednesday, the 11th day of February, A. D. 1891, in the hall of the house of representatives, for the purpose of electing a United States Senator from the State of Idaho for the term of 6 years, beginning March 4, A. D. 1891, a majority of the members elected to each house being present, the journal of each house for the preceding day was read, and it appearing therefrom that on Tuesday, the 10th day of February, A. D. 1891, each house openly, by a *viva voce* vote of each member present a majority of each house being present and voting, voted for a Senator in Congress from said State to fill said term, and that the same person had not received a majority of the votes of each house; the joint assembly thereupon proceeded to choose, by a *viva voce* vote of each member present, a person for Senator, and William H. Clagett, a native-born citizen of the United States, over 30 years of age, and an inhabitant of said State, received a majority of all the votes of the said joint assembly, a majority of all the members elected to both houses being present and voting, and was duly elected a United States Senator from the State of Idaho, for the term of 6 years, beginning on March 4, A. D. 1891, to succeed William J. McConnell.

In testimony whereof, I have hereunto set my hand and caused to be affixed the great seal of the State.

Done at the capitol in the city of Boisé, the capital of Idaho, this fourteenth day of February, in the year of our Lord one thousand eight hundred and ninety-one, and of the independence of the United States of America the one hundred and fifteenth.

NORMAN B. WILLEY,
Governor.

By the governor:

Secretary of State.

UNITED STATES OF AMERICA, *State of Idaho*, ss:

I, Norman B. Willey, governor of the State of Idaho, do hereby certify that I signed the foregoing certificate of the election of William H. Clagett as United States Senator on the fourteenth day of February, A. D. 1891, as governor of said State, and that my signature thereto is genuine; and that I thereupon presented the same to A. J. Pinkham, the secretary of state for said State, and requested him to countersign said certificate and attach the great seal of the State thereto (of which he is the legal custodian), and that he refused and still refuses to do so.

Witness my hand at the capitol in Boisé City this fourteenth day of February, A. D. 1891.

NORMAN B. WILLEY, Governor.

STATE OF IDAHO, *County of Ada*, ss:

Be it known, that on the fourteenth day of February, in the year of our Lord one thousand eight hundred and ninety-one, personally appeared before me, Jonas W. Brown, a notary public in and for said county duly commissioned and sworn and acting as such, Norman B. Willey, the governor of the State of Idaho, personally known to me to be the person who executed the two foregoing certificates, and whose signatures thereto are personally known to me to be genuine, and he acknowledged to me that he executed the same and each of said certificates, and that his signature to each of said certificates is genuine.

In witness whereof I have hereunto set my hand and affixed my official seal at my office in Boisé City, in said county of Ada, the day and year in this certificate above written.

JONAS W. BROWN,
Notary Public.

STATE OF IDAHO, OFFICE OF THE SECRETARY.

UNITED STATES OF AMERICA, *State of Idaho*, ss:

I, A. J. Pinkham, secretary of the State of Idaho, do hereby certify that Jonas W. Brown, whose name is subscribed to the annexed instrument, was at the time of subscribing the same a notary public within and for the county of Ada, in the State of Idaho, duly appointed, qualified, and acting as such officer, authorized by the laws of the State to issue the same.

I further certify that the impression of seal to the said certificate affixed is a genuine impression of the seal of said Jonas W. Brown, and that the signature to said certificate affixed is in the handwriting of said officer. In testimony whereof I have hereunto set my hand and affixed the great seal of the State.

Done at Boisé City, the capital of Idaho, this 14th day of February, A. D. 1891.

[SEAL.]

A. J. PINKHAM,
Secretary of Idaho.

STATEMEET OF FACTS.

In addition to the general facts disclosed by the preceding record and the documents above referred to, and as showing the illegality of Mr. Dubois's alleged election, the following specific facts are specially charged:

(1) That at the election in December, 1890, there were four Republican candidates before the legislature, namely: George L. Shoup, William J. McConnell, Fred. T. Dubois, and William H. Clagett. That the legislature on joint ballot contained 34 Republican majority; that the strength of these four Republican candidates on the first choice votes

were as follows: Fred. T. Dubois, 18; William J. McConnell, 9; William H. Clagett, 8, and George L. Shoup, 8. There being 54 members of the legislature, it took 28 to elect.

(2) That Messrs. Shoup and Dubois formed a combination to elect themselves, but lacked sufficient votes to make up a majority. They thereupon, on the night of December 17, after the first day's voting in joint assembly, enlarged their combination by embracing William J. McConnell therein, and by means of this combination a majority of the members of the legislature were induced to pledge themselves in writing that on the next day, December 18, they would, in joint assembly, take three ballots and elect George L. Shoup on the first ballot, William J. McConnell on the second, and that Fred. T. Dubois should receive the votes of the members entering the combination when the time should arrive when he could be elected, as provided by law, as I am informed by affidavits herewith filed and otherwise. Dubois, under the terms of the agreement between the three candidates, was to be elected for the term beginning March 4, 1891.

(3) That this agreement between the three candidates and many of their respective supporters in the legislature was not a concerted action between friendly elements, but consisted of a combination of elements in a large measure thoroughly hostile to each other, but which had coalesced for the purpose of securing the election of the three to the United States Senate, and involved a surrender of cherished animosities on the part of the three candidates, and particularly on the part of Messrs. McConnell and Dubois and many of their supporters in the legislature.

(4) That as stated in the record, the election of the two Senators to fill existing vacancies was required by the constitution and admission act to be done within 10 days after the organization of the legislature, while the Revised Statutes of the United States, above quoted, prescribing the method of electing a Senator to fill a vacancy to happen in the future, provide that the electoral proceedings shall begin on the second Tuesday after the organization of the legislature.

So that, to elect Messrs. Shoup and McConnell, as provided by law, the electoral proceedings had to begin at one time, while to elect Mr. Dubois, in the manner provided by law, they had to begin at a later date, the legislature having been organized on Tuesday, December 9, 1890, and the second Tuesday thereafter falling upon the 23d day of December.

(5) That the combination formed between the supporters of the three candidates was one of so little cohesion, in consequence of the bitter hostility between a large number of the members and the candidates whom they represented, that it was impossible to hold it together between the date of the election of Messrs. Shoup and McConnell and the time fixed by law for the election of Mr. Dubois.

That in consequence of this difficulty, Mr. Dubois and his supporters in the legislature knowingly brought about his alleged election on the 18th day of December, 1890, five days prior to the time fixed by law for the electoral proceedings to begin, so far as the term beginning on the 4th of March, 1891, was concerned; and induced, in connection with the two other candidates and their respective supporters, a majority of the legislature to proceed to elect him five days in advance of the time fixed by law and without taking a separate vote for the election of a Senator to fill the term beginning March 4, 1891, in the two houses acting separately; and furthermore, induced the joint assembly (convened for the sole purpose of filling the two vacancies provided for

in said section 14, article 21 of the constitution) to proceed to his election immediately after the election of Messrs. Shoup and McConnell; and that these violations of law in the legislature, on the 18th day of December, A. D. 1890, were entered upon and undertaken with full knowledge that the election of a third Senator at that time was contrary to law.

(6) That the proceedings on the night of December 17, 1890 (when the contracts were signed by the various members of the legislature supporting these three candidates) were kept as secret as possible so far as the other members of the legislature were concerned. When the joint assembly convened on the 18th, and Senator Gunn offered his resolution recited above, neither time nor opportunity was given to investigate the question as to the validity of the election of a third Senator at that time; but the whole thing was "railroaded" through with indecent haste and in such manner as wholly deprived the two houses of their legal power and duty to take a vote as to such election in the two houses acting separately. The fact is, as the journals show, that no vote in the separate houses as required by said section 15 was ever taken as to the said election of a Senator to the said term beginning March 4, 1891. This course of procedure contributed largely to the alleged election of Mr. Dubois. If an adjournment had been had after the election of the two Senators to fill existing vacancies the combination, because of its inherent weakness, would have fallen to pieces before the 23d day of December, 1890, and Mr. Dubois would not have been elected.

In proof of the statements herein contained reference is hereby made to all the documents referred to in this memorial, and in addition thereto to the affidavits presented herewith of 28 members of the present session of the legislature who participated in the electoral proceedings in December, 1890, and copies of which affidavits are made part of this memorial, the originals being on file with the committee.

PROPOSITIONS OF LAW.

It is not the purpose of your memorialist to make this paper a brief discussing the law points in the case, or present the authorities in support thereof. Should the committee so permit, and should it become necessary or appropriate to present a brief upon the law of the case, your memorialist will gladly, and at the convenience of the committee, present such brief. The design of this paper is simply to get before the Senate the documents which show the title of your memorialist to said seat, and which, as your memorialist claims, show that when the certificate presented by the Hon. Fred T. Dubois is taken in connection with the certified journals of the legislature and the other documents herein referred to it does not make a *prima facie* title in favor of said Dubois for the reasons stated in the propositions of law named below:

I.

By section 15 of the Revised Statutes (that being the statute controlling the election for the term beginning March 4, 1891) the legislature is prohibited from making an election of a Senator in joint assembly until after one or the other of two conditions precedent to entering upon such election in joint assembly has occurred.

One of these conditions precedent is that there shall have been a failure to elect by separate votes in the respective houses on the second

Tuesday after the meeting and organization of the legislature; the other that one or the other of the houses shall have failed to take proceedings in the separate houses for the election of a Senator on the second Tuesday after the organization. It was therefore impossible that this second condition precedent to the right to enter upon an election in joint assembly should have transpired prior to the 23d of December, because it could not be predicated of either house prior to the 23d of December that it had failed to take proceedings in the separate houses required by section 15 for the election of a Senator; and hence, the entering upon an election in joint assembly on the 18th of December is absolutely prohibited by law. This provision is not directory merely, but mandatory, and obedience to it is essential in order to give jurisdiction to the legislature to make an election of a United States Senator.

II.

It is a fundamental principle applicable to the law of elections that where a statute fixes a day upon which an election shall be made, and contains no conditions or provisions authorizing it to be made before that day, then the election must not be entered upon or made prior to the time so fixed by law. Such provisions of the statute are universally held to be mandatory and an election held before the time fixed by law is simply and absolutely void. The statute applicable to the present election is of that character.

III.

Whilst the statute controlling the election now in question is mandatory in prohibiting an election being entered upon before the second Tuesday after the organization of the legislature that is to make the election, yet it is a statute which authorizes an election to be made after the day named for commencing the election if, for any cause, such election is not entered upon on the said second Tuesday.

In other words the statute is one which is designed to prohibit the legislature from postponing an election beyond the session named in the statute, and it therefore imposes a continuing duty upon the legislature to make an election during said session, and if for any reason not begun on the day named, then as soon thereafter during said session as practicable and, if possible, before the vacancy actually happens. That this duty is a continuing one, as just stated, is shown not only by the general character of the statute and the mischiefs that are known to have caused its enactment, but is expressly shown by that term of the statute which provides that "if either house has failed to take proceedings as required by this section the joint assembly shall then proceed to choose," etc. Here is a clause which expressly, literally, and unambiguously requires that in the event that one or both houses shall fail to take proceedings on said second Tuesday for an election, as required by sections 14 and 15, then the statute commands them to do so after the said day named, to wit, after said second Tuesday.

IV.

Since in the present case the certified copies of the journal of the legislature show conclusively and expressly that no organization of the legislature was accomplished until the 9th day of December, 1890, and since they show that the pretended election of the Hon. Fred. T. Dubois,

if made, was made upon the 18th of December, it is therefore shown by the said journals that his pretended election was made at a time when it was impossible in law to make a valid election for said term beginning March 4, 1891; and, therefore, as against the journals, his certificate does not show any prima facie right for him to take his seat which he claims, and he ought not to be admitted to such seat and your memorialist be thus driven to the position of a contestant. On the contrary, the journals, taken in connection with the certificate presented by your memorialist, show that he is prima facie and on the merits entitled on the 4th of March, 1891, to take his seat as Senator for said term.

V.

Your memorialist further submits that, as a matter of political morality, public policy, and proper parliamentary practice, it is essential that, where the transactions which have resulted in rendering an election illegal are the fruits of an intentional fraud upon the law, there, and in every such case, it is appropriate for the legislature, required to pass upon such election, to take into consideration the fraudulent practices that have resulted in the pretended election. This is indispensable in order to prevent the certificate showing a prima facie right from having the effect, in any case, of giving a seat, even temporarily, to the party holding such certificate so obtained. It is for this reason especially that your memorialist has set forth in this memorial, and the affidavits hereto attached, the fraudulent combinations which have resulted in the alleged election of the Hon. Fred. T. Dubois.

WM. H. CLAGETT.

SHELLABARGER & WILSON,

Attorneys for Hon. Wm. H. Clagett.

APPENDIX.

AFFIDAVITS OF A MAJORITY OF THE MEMBERS OF THE LEGISLATURE OF IDAHO, SHOWING THE FACTS RELATING TO THE ALLEGED ELECTION OF HON. FRED. T. DUBOIS AND BEARING UPON THE QUESTION OF THE ILLEGALITY OF SUCH ALLEGED ELECTION.

STATE OF IDAHO, *County of Ada, ss :*

John A. Finch, J. S. Langrishe, J. F. Cameron, C. D. Porter, A. L. Scofield, John Hanly, Ira S. Sperry, and Henry Armstrong, being first duly sworn, do say under oath, each for himself and not one for the other, that we are all Republicans in politics and members of the present session of the legislature of the State of Idaho, and all voted for William H. Clagett for United States Senator at the election that was held in December, 1890, and again voted for him at the second election held in February, 1891; that as among all of the candidates before the convention in December, Mr. Clagett was our first choice, and we have supported him in both elections; that the four Republican candidates for Senator, namely Messrs. Shoup, McConnell, Dubois, and Clagett, all had their rooms commonly called headquarters at the Capitol Hotel in Boise City, and that these rooms all adjoined each other. That during all of the preliminary arrangements prior to and down to the close of the joint convention on December 18, 1890, being what was known and called the original Clagett men, we were almost constantly at his headquarters and consulted by him as to the various moves on the Senatorial checkerboard, and were advised as to his actions and motives on every proposition of any special importance; that the two sections of the State are divided by a very high range of mountains known as the Salmon River Range, running from east to west, over which there is no regular means of communication, and that it is practically impossible to go from north to south Idaho except by making a detour around through the States on the east or the west of Idaho; that this total separation of the two ends of the State in all matters of business connection gave rise years ago to a proposition to annex north Idaho to the Territory of Washington, and that this agitation was kept up for a period of many years, resulting in a very great alienation between the two sections, and especially on the part of the old inhabitants in the northern portion of the State.

That when the Republican State convention met at Boise in August, 1890, it was deemed wise to draw the people of the State together in bonds of mutual sympathy and support, and to that end it was proposed to insert a plank in the Republican platform in favor of equal representation of the two sections of the State in the Senate of the United States. That a resolution to this effect was reported by a minority of the committee on resolutions, was debated at length before the convention, was adopted by a vote of 61 to 39, and was then added to the Republican platform as a part thereof by the unanimous vote of the Republican convention; that four of the five northern counties are Democratic in sentiment or exceedingly doubtful, but that in consequence of the feeling of confidence which the insertion of that pledge in the Republican platform gave to the people, all five counties went Republican, and sent solid Republican delegations to the State legislature. That when we reached Boise we found that Mr. Dubois and Governor Shoup had formed a combination to defeat the pledge upon which the party had carried the State; that every effort was made by us and by Mr. Clagett to induce the Republicans of the legislature to abide by the platform upon which the State had been carried; that all of our efforts were a failure, because it was impossible to separate Mr. Dubois and Governor Shoup, or to induce or persuade either one of them to state that he intended to abide by the platform of his party; that Governor Shoup and Mr. Dubois together had 23 or 24 votes, and only lacked 4 or 5 of a majority; that between Mr. Dubois and Mr. McConnell there was a deep-seated feeling of hostility, and that Mr.

McConnell declared over and over again that under no circumstances would he ever form any combination or make any arrangement by which Mr. Dubois would be elected to the Senate as his colleague; that this hostility in part grew out of the fact that Mr. McConnell for reasons satisfactory to himself had refused to submit himself to the direction of the Republican State committee in the campaign before the election, and although a Republican had made an independent canvass of his own, calling his own meetings, and in every way repudiating the political authority of the State committee; that this feeling of hostility to our personal knowledge was shared by many of the supporters of Mr. Dubois.

That on the night of December 17, 1890, Messrs. Shoup and Dubois took Mr. McConnell into their combination for the purpose of securing the 4 or 5 votes necessary to secure the election of the two former, and that 17 of the 18 supporters of Mr. Dubois voted for Mr. McConnell, notwithstanding the repeated declarations of many of them of hostility to him and that they would never under any circumstances vote for him. That prior to this combination on December 17, we knew from many sources that Governor Shoup and Mr. Dubois were willing to form a combination with Mr. Clagett on the same terms as were afterwards obtained by Mr. McConnell, namely, that Mr. Dubois should be conceded an election to the term beginning March 4, 1891, while Governor Shoup and Mr. Clagett should be elected to fill existing vacancies, and draw for terms; that Mr. Clagett absolutely refused to accept any such terms, claiming that in case he should accept them that the party pledge would be dishonored, inasmuch as after March 4, 1891, the question as to whether north Idaho should have any representation in the Senate would then depend upon the mere chance of a drawing instead of upon the fulfillment of a party pledge. And these affiants do further say that from the whole tenor of Mr. Clagett's conversations with us of a confidential nature, we are entirely satisfied and know that he voluntarily accepted defeat rather than place his party in such a humiliating and defenseless position and leave the section of the State in which he resided unprotected in its interests as it would be in case he should be elected under the proposed arrangement and draw the term ending March 4, 1891.

We do further say that Mr. Clagett, from the time the election was held in December, always claimed that Mr. Dubois was not elected, and when in January the drawing for terms was had in Washington and Mr. McConnell drew the term ending March 4, 1891, thus depriving north Idaho of representation in the Senate, he suggested to us and to others that the only way to save the party from dissolution in consequence of the repudiation of the party platform was to hold another election and elect some one from north Idaho to succeed William J. McConnell for the 6 years beginning March 4, 1891; that in the second election Mr. Clagett was a candidate, but repeatedly stated that if any person acceptable to the northern portion of the State could be found who could poll the same strength as himself in the legislature, that he would without hesitation gladly support him; that the second fight which we and other Republican members of the legislature made for him was purely voluntary on our part, and was made for the purpose of redeeming as far as possible the record of the Republican party on this subject.

JOHN HANLY.	J. F. CAMERON.
H. ARMSTRONG.	J. S. LANGRISHE.
A. L. SCOFIELD.	JOHN A. FINCH.
C. D. PORTER.	IRA S. SPERRY.

Subscribed and sworn to before me this 17th day of February, 1891.

[SEAL].

JONAS W. BROWN,
Notary Public.

STATE OF IDAHO, *County of Ada, ss:*

I, John S. Gray, being first duly sworn, say under oath, that I am 57 years of age, a Republican in politics, a member of the senate of the State legislature from Ada County, wherein is located the City of Boise, and am president *pro tempore* of the Senate. That when the Republican State convention in August, 1890, placed the plank in its platform pledging the party in effect to an equal representation of north and south Idaho in the Senate of the United States, I doubted the wisdom or propriety of the act, but inasmuch as the Republican convention after full discussion had adopted it as a measure which seemed to them to be both just and politic, I felt called upon as a Republican to support it in its spirit as well as in its letter, and have done so constantly from the beginning to the end.

That when the legislature convened I was in favor of electing Governor Shoup from the southern part of the State and Mr. McConnell from the northern part, but in consequence of the combination that was made between Messrs. Dubois and Shoup to take both Senatorships themselves in violation of the platform of the party, I was unable to carry out my own personal preferences, although I endeavored in every

honorable way so to do. Governor Shoup and Mr. Dubois together lacked only a few votes of a majority of the legislature, and refusing to recognize the platform as they ought to have done, and Mr. Dubois openly repudiating it, they finally succeeded in inducing Mr. McConnell to enter into the combination with them and thereby carry through the programme which resulted in the election of the three. That I had heard Mr. McConnell time and time again declare that under no circumstances would he ever have anything to do with Mr. Dubois in the way of combining or arranging with him for their election to the United States Senate; that he, Dubois, had abused him unreasonably during the canvass and made a personal fight against him. When on the night of December 17th I learned that Messrs. Shoup, McConnell, and Dubois had combined together, learning this fact from Mr. McConnell himself, I remonstrated with Mr. McConnell in the strongest possible terms, telling him that he had not kept the party faith nor done as he agreed with me from the time that we had commenced the Senatorial fight.

On the next day, December 18, when the joint assembly met, I opposed the resolution offered by Senator Gunn to go into the election of the third Senator at that time, because such an election was a gross violation of the law of Congress governing the election of Senators to fill vacancies to happen in the future; that the grounds which I urged before the joint assembly were as follows:

First, that our constitution required the election of two Senators only; that the admission act required two; that the governor in his proclamation convening the legislature specified that only two were to be elected, and that the concurrent resolution, under which the joint assembly convened, also provided for the election of Senators as provided by law, the law being that two Senators should be elected within ten days from the organization of the legislature.

Second, because no separate vote had been taken in the two houses acting separately, and no concurrent resolution fixing the time for the election of a third Senator had been introduced or passed in either house.

Third, because in the act of Congress it was illegal to anticipate the date for the election of the third Senator, or to elect him prior to the second Tuesday after the meeting and organization of the legislature, the legislature having been organized on Tuesday, December 9, 1890, and the second Tuesday thereafter falling on December 23, 1890.

Fourth, because it could not be ascertained to a legal certainty that there would be a vacancy after March 4, 1891, until after the two Senators elected had drawn for terms.

That quite an animated discussion followed the introduction of this resolution, but the majority obtained and created by means of this combination overrode all objections and passed the resolution to proceed immediately to elect the third Senator, after the two were elected, to elect whom the joint assembly had convened.

That after Governor Shoup and Mr. McConnell were elected I made a motion to adjourn, which was voted down, and that I thereupon entered a formal protest against the entire proceeding for the election of the third Senator, and requested that it might be entered upon the journal; that in making this protest I have reason to believe, and do believe, that I voiced the sentiment of the entire minority, who, by their votes and action, showed that they were opposed to the election of a third Senator, and agreed with me that the election at that time was contrary to law.

I have never, at any time, had any doubt as to the illegality of Mr. Dubois's election; and believing this to be the case, when the question came up the second time after Mr. McConnell had drawn the term ending March 4, 1891, and I saw that thereby north Idaho had been deprived of representation in the Senate which the Republican platform promised, I voted in favor of such new election, and voted for Mr. Clagett and supported him in all proper measures until the election was secured.

I do further say that on December 19, Mr. J. M. Ballentine requested in the house of representatives that the house journal should be so amended as to show in detail the various objections urged by me on behalf of the minority to the election of the third Senator; that I have read the amendment which he proposed to incorporate in the journal and that the same states correctly, in substance, the grounds of my objections except that it fails to specify the objection that the election was premature, the electoral proceedings not having begun on the second Tuesday after the meeting and organization of the legislature.

JOHN S. GRAY,
President of the Senate.

Subscribed and sworn to before me this 17th day of February, A. D. 1891.
[SEAL.]

JONAS W. BROWN,
Notary Public.

STATE OF IDAHO, *County of Ada, ss:*

Ira S. Sperry, being first duly sworn, says under oath that I am a Republican and a member of the present legislature of Idaho, and a representative from Nez Perces County, in north Idaho; that when I came to Boise to attend the legislature I was well acquainted with William J. McConnell, and barely acquainted with Messrs. Clagett and Dubois, and unacquainted with Governor Shoup, that the Senatorial canvass absorbed the attention of the entire legislature for sometime prior to its meeting and organization, and down to the 18th day of December, 1890; that Nez Perces and Latah Counties are the two northern counties in which the old annexation sentiment to Washington was the strongest; that I understood during the canvass that the plank in the Republican platform, which was universally understood by all parties as pledging equal representation in the Senate of the United States to the northern and southern sections of the State, was placed in the platform for the purpose of obliterating all old controversies and sources of dissatisfaction between the people of the two sections of the State, divided as these sections are by the practically impassable Salmon River Range. With that understanding I made my canvass before the people of Nez Perces County, and said county returned, unexpectedly to the State at large, a Republican delegation to the legislature. When I came to Boise it was with the determination to secure the fulfillment of the promises made in the platform and upon which the canvass in north Idaho had been conducted, and as I am informed, in a very large measure also conducted in the southern part of the State.

As between the two northern candidates my preference was for Mr. Clagett, who was also the choice of the Republicans of Nez Perces County, and I advocated his election from first to last, and also supported him when the matter was brought up in February for the second time. To my personal knowledge, Mr. Clagett was importuned time and again by the friends of Mr. Dubois to enter into a combination with Mr. Dubois and Governor Shoup by which Mr. Dubois was to be elected to the term beginning March 4, 1891, and Governor Shoup and Mr. Clagett were to be elected for the two short terms and draw for terms, and that he refused all such offers. I opposed the resolution offered by Senator Gunn in the joint assembly to elect the third Senator prior to the second Tuesday after the organization of the legislature, and I was opposed to electing this third Senator at any time until the two elected to fill existing vacancies had drawn for terms, as thereby there was no method by which the platform of the party could with absolute certainty be carried out and north Idaho with absolute certainty be secured equal representation in the Senate, and I was in favor of reelecting for the long term the man who should draw the short term ending March 4, 1891. In the joint assembly of December 18, the minority were taken largely by surprise for the reason that until the night of December 17 they had no knowledge of any combination having been formed for the election of the third Senator, and there was not sufficient time left prior to the meeting of the joint assembly on December 18 to examine strictly into the questions involved and to make an organized opposition to the programme. Judge Gray, however, in his opposition to the carrying out of this proposition voiced my sentiments, and so far as I know that of the entire twenty-five members voting against it, but the matter was carried through in spite of our opposition. I voted for Mr. Clagett on the first two ballots as against Governor Shoup and Mr. McConnell, and then voted to adjourn the joint assembly, being opposed to the election of a third Senator at that time. When the motion to adjourn was lost, having voted twice for Mr. Clagett, and knowing from the vote that it was impossible to elect him, on the last ballot I voted for Mr. Dubois because I believed that it was the general sentiment of the Republicans of Nez Perces County that Mr. Dubois should be elected as the Senator residing in south Idaho.

As I have before stated, the springing in the joint assembly itself of the proposition to elect the third Senator immediately after electing the other two, was premature to me, and I did not have time to examine the question as to whether it was or was not according to law, but that after the dissolution of the joint assembly there was a great deal of discussion in Boise City upon the subject, and in the public press of the State, and I thereupon proceeded to examine the matter as carefully as I was able to do, not being a lawyer, and came to the conclusion that Mr. Dubois had not been legally elected; and when the drawing for terms took place in Washington, and Mr. McConnell drew the short term ending March 4, 1891, seeing that north Idaho was left without representation, and the Republican party's promises were not fulfilled, I strongly favored holding another election, by which the mistakes and errors of the first election could be corrected, and advocated the election of Mr. Clagett, and voted for him.

I forgot to mention that in the first stage of the proceedings after I had heard of the combination between Shoup and Dubois, and before I had finally made up my mind as to whom I would support for Senators, I called on Mr. Dubois and told him that I had heard that he did not intend to stand by the platform of the Republican

party, assuring one Senator to north Idaho, and asking him if that was true; in reply he said to me that he did not think that that portion of the platform was binding upon the party.

IRA S. SPERRY.

Sworn to before me and subscribed in my presence by the said Ira S. Sperry, on this 16th day of February, 1891.

[SEAL.]

JONAS W. BROWN,
Notary Public.

STATE OF IDAHO, *County of Ada, ss:*

I, J. R. De Lamar, being first duly sworn, do say under oath that I am 41 years of age, a Republican in politics, and a State senator in the present legislature, representing the senatorial district of Owyhee and Cassia Counties. That I was a delegate in the Republican State convention that met in Boise in August last, and am personally cognizant of all the facts relating to the adoption by that convention of a resolution which was inserted in its platform, pledging equal representation in the Senate of the United States to north and south Idaho respectively. That the question of the adoption of this resolution was considered in and out of the convention for the period of two days if not longer. That the growth of north Idaho in the last few years has been so great that the changed condition of the two sections was not generally known to the people of the southern part of the State. That in the discussion in the convention on the adoption of this resolution such a condition of things was manifest as rendered it both just and politic to place that plank in the platform, which was done after it was adopted, by the unanimous vote of the convention. On the adoption of the resolution I was excused from voting because I was a candidate for my present position, but my two colleagues voted in favor of it. From that time on very largely, to my personal knowledge as well as upon information, the Republican canvass was very largely conducted upon this resolution in the platform, and I am informed and believe that it was due to it that the northern end of the State sent an unbroken Republican delegation to the legislature.

When I came to Boise to attend the legislature, I was in favor of Governor Shoup and Mr. Dubois as United States Senators for the reason that after the election I had been informed by some of their friends in the southern end of the State that the people of the north did not care for this Senatorial representation. In that view of the case, if true, I was in favor of Messrs. Shoup and Dubois.

On the arrival of the northern members of the legislature, a conference was held at which I was present, and at which every northern member in the most positive terms stated the facts connected with it, and demanded the fulfillment of the pledge in the platform. I then saw that either Mr. Dubois or Governor Shoup had to be dropped so far as I was concerned, and as between the two my preference was Governor Shoup.

About this time I learned of the combination between Messrs. Shoup and Dubois to secure both Senatorships for themselves. On two occasions I visited Governor Shoup and asked him whether he intended to live up to the platform upon which he was elected; the only satisfaction that I could get from him was that he intended to use all honorable means to get himself elected to the Senate. From that time on down to the 18th of December, the Senatorial canvass resolved itself into the proposition as to whether the Republican party as represented in the legislature would or would not live up to the platform of the party. Governor Shoup and Mr. Dubois finally, to obtain the votes necessary to elect themselves started the three-Senator plan, and in the end induced Mr. McConnell to combine with them and bring into the combination the four or five votes necessary to elect all three. To this whole programme I was violently opposed, and fought it at every stage in which it came up in the joint assembly, and in every other way.

After the election was over its result was received by the people at large, and especially by the Republicans throughout the State, judging from the comments in the press and private advices, with a feeling of supreme disgust. The Republicans were especially indignant for the reason that they felt that the most solemn promises which a political party can make had been willfully endangered by its trusted leaders who succeeded in inducing a majority of the Republican members to assist them in this combination. In my own senatorial district and in the county of Ada, where I had the opportunity to witness the effect of this election, I found that very large numbers of old-time Republicans were threatening to leave the party, and many, to my certain knowledge, declared that they would never vote the Republican ticket again on account of the selfishness of the southern leaders who jeopardized the pledges of the platform. After Mr. McConnell drew the term ending March 4, 1891, and it became evident that the Republican platform was

completely dishonored, believing as I did that Mr. Dubois's election was wholly invalid because of the violations of law resorted to secure it, I earnestly advocated the holding of a second election, which finally resulted on the 11th day of February in the election of Mr. Clagett for the term beginning March 4, 1891.

I am satisfied in my mind that had Mr. Dubois deferred his election until the second Tuesday after the organization of the legislature he never could have been elected, as outside of the combination he formed with Messrs. Shoup and McConnell he only had eighteen votes, and some of whom, as well as some of the supporters of Messrs. McConnell and Shoup, were opposed to electing a third Senator for the reason that they intended to live up to the platform and allow one Senator to the north; or, in other words, if the northern Senator should draw the short term he should be eligible for reelection, and the north should not be cut off by the election of a third Senator at that time from the southern end of the State. And I have no hesitation in saying that in my mind there is not even the shadow of a doubt that Mr. Dubois owes his election directly and immediately to the violation by him and his supporters of the act of Congress governing the method and time of electing a Senator to fill a future vacancy, and that it was through and by means of this violation only that he was declared elected to the Senate of the United States.

And further I say not.

J. R. DE LAMAR.

Sworn to before me and subscribed in my presence by the said J. R. De Lamar on this 18th day of February, 1891.

[SEAL.]

JONAS W. BROWN,
Notary Public.

STATE OF IDAHO, *County of Ada, ss:*

I, Martin King, being first duly sworn, do say under oath, that I am a member of the present session of the Idaho legislature as a representative from Elmore county, in south Idaho. When I came to Boise to attend the legislature, although living in south Idaho, I came with the determination to carry out the Republican platform, which declared for equal representation in the Senate between the two sections of the State. It was the sentiment of the people of Elmore county, represented by me, that this plank in the Republican platform should be carried out in good faith, both parties in their State platforms having declared in favor of it. I am a Republican in politics, and my personal preferences, as well as the wishes of the Republicans of Elmore county, were in favor of Mr. Dubois as the Senator from south Idaho, and Mr. Clagett as the Senator from north Idaho. Among the Republicans of Elmore county there was a general antipathy to Mr. McConnell, for the reason that it was and is generally believed that he failed to do his duty as a Republican in the canvass prior to the popular election in October, 1890, while it was known that Mr. Clagett made an effective canvass through the State, paying no attention whatever to his personal aspirations for the Senate, but laboring with an eye single to the success of the Republican party.

When I reached Boise I found that Messrs. Dubois and Shoup were combining together, but did not have votes enough to elect either one, so they brought up what was called the three Senator proposition, so that they could both be elected, and to do this they tried to get the members supporting them to also support some man they would name. I heard the members say that there was only one man in the north they would support and that was William H. Clagett. About December 13, 1890, this matter was brought up in a meeting of the friends of Governor Shoup and Mr. Dubois in Mr. Dubois's headquarters, when all or very nearly all of their respective supporters were present, and while I will not say positively that every one of their supporters made the declaration that Mr. Clagett was the only man in north Idaho whom they would support, I do not think that by any possibility there could be more than two or three of the entire number who failed to make such statement. I know that so far as the supporters of Mr. Dubois and Governor Shoup were concerned, they were substantially a unit in favor of Mr. Clagett as against Mr. McConnell if a north Idaho man was to be elected at all according to the platform.

Several of Mr. Dubois's supporters were strongly in favor of keeping the platform in its spirit by according full representation to the two sections, but nearly all of the supporters of Messrs. Dubois and Shoup were in favor of the three Senator proposition, namely to insist upon it that Mr. Dubois should have the term beginning March 4, 1891, while Governor Shoup and Mr. Clagett should be elected to fill existing vacancies and draw for terms. Mr. Clagett, however, refused every overture from Messrs. Shoup and Dubois that fell short of a frank and complete performance of the party pledge, stating to me, as he did to all others so far as I have heard or could learn, that while he was perfectly willing to take his chances on an election on his

own merits in a fair ballot, that he would not consent to submit the good faith of the Republican party and the interests of his section to the chance of a drawing, when the platform has promised and the campaign had been conducted upon the positive pledge of equal representation; that if he should be elected to fill one of the vacancies and should draw the short term, the good faith of the Republican party would be compromised, and that even though he should draw the longer of the two short terms, it would still not be a performance of the promise. During the canvass I talked with his supporters frequently, and understood thoroughly his position on the subject.

Mr. Clagett at last put his ideas in writing and wrote an open letter to the Republican members of the legislature, in which he proposed, as the only way by which the party pledge could be unquestionably kept in good faith was to elect two Senators to fill existing vacancies, that they proceed to Washington and draw for terms, and when it was ascertained from what part of the State the man should come who drew the term ending March 4, 1891, to reelect him or elect some other person from his section of the State to succeed him. When the supporters of Messrs. Shoup and Dubois, who were desirous of having Mr. Clagett come into the combination on the terms before indicated, namely, to concede the long term to Mr. Dubois, found that he would not accede to these terms, it was then proposed that they should elect Mr. Clagett in spite of himself to one of the short terms. Mr. Clagett was approached on the subject, and he stated that if the members saw fit to elect him in spite of himself to one of the short terms, and at the same time fill the vacancy occurring March 4, 1891; that he had no power to help himself; but that if he should consent to such a programme, leaving the fulfillment of the party pledge subject to a chance in a drawing, and running the risk of North Idaho being without representation after March 4, 1891, he would be a party to a scheme which was certainly a failure to keep the party platform, and according as the chance of the drawing might fall would or would not be a complete repudiation of it, and he would not be a party to such a scheme.

The friends of Messrs. Dubois and Shoup then hunted around to find some other northern man other than Mr. McConnell, whom they could draw into the combination, and Captain Wells, the joint Senator from Latah and Kootenai counties was selected for this purpose; Mr. Dubois in particular wished to make himself absolutely safe in the possession of the term beginning March 4, 1891, by bringing some northern man into the combination who could bring to it the few votes necessary to carry out the three Senator idea; and somewhere from the 12th to the 14th of December, 1890, a meeting was held in Mr. Dubois' headquarters in which Captain Wells was introduced and began a speech to the members assembled there, suggesting himself as a compromise candidate from the north. Some of the supporters of Messrs. Dubois and Shoup refused to accept Mr. Wells as their candidate, and stuck to it that if a northern man was to be elected at all it should be Mr. Clagett; thereupon Mr. Wells said that he was a friend of Mr. Clagett, and could get his ear at any time, and he would go and see him, and insist upon his running for the term mentioned under the proposed arrangements; he did so, and finally came back and said that Mr. Clagett could not see his way clear to do so, or something to that effect, and to let the gentleman rest for a day or two, and he might come in, and he also stated that we could elect Mr. Clagett without the aid of any one of the 8 votes which he was known to have, or in other words, in spite of himself. Captain Wells also claimed in his talk to us all that night, that Mr. McConnell was virtually out of the race, and that therefore he, Captain Wells, who had supported Mr. McConnell, was free to take any course he might think advisable as to what man from North Idaho should be elected.

From the time of this meeting matters ran on until the night of December 17, when Mr. McConnell was taken into the combination by Messrs. Shoup and Dubois. On the 17th I was notified that there would be a meeting in Mr. Dubois' rooms at 9 o'clock at night, not knowing what the meeting was for; when I got there I found out that they were making a combination, or had made a combination, with Messrs. Shoup and McConnell for Messrs. Shoup and McConnell to be elected to fill existing vacancies, and Mr. Dubois to be elected to fill the term beginning March 4, 1891; I was told that a paper had been drawn up and signed by a part of Mr. Dubois' supporters, and then torn up, and a second paper was there in the room with the signatures of a large number of persons to it; I glanced over the paper but did not read it carefully, because I was so mad when I found out that they had entered into this combination that I did not care anything about any paper that they might have; although requested so to do, I absolutely refused to sign it or to have anything to do with the combination. After I refused to sign the paper, one of Mr. Dubois' friends called me out of the room to see Mr. Dubois himself, whom I met in the hall-way of the hotel. Mr. Dubois requested me to sign the paper, saying that it was the only way for him to be elected to the 6-year term beginning March 4, 1891. I told him in reply that I would do anything for him in the world, but that I would not enter into any combination that would elect Mr. McConnell.

I asked Mr. Dubois if he thought that he was doing right, and whether he did not

think that by taking the course he was taking, that he was running a serious risk of not being elected or not being seated, and he replied to me then by saying he was willing to take his chances on that. Mr. Dubois then asked me not to make any opposition to the plan that had been made, and I told him that I would see about that. I then left Mr. Dubois and told one of the friends of Mr. Clagett about the combination having been formed. There was a great deal of confusion that night, and members were flying to and fro, so that although I immediately began to see whether the combination could not be broken up, it was impossible to arrest the attention of members so that they could listen to my reasons and arguments against it. My particular reason for refusing to go into the combination, although I was a friend of Mr. Dubois, was because I believed that all such combinations were bad public morals, and that this one would be very injurious to the interests of the Republican party and of the State.

As the two houses had passed the concurrent resolution to elect two Senators to fill existing vacancies, when the joint assembly met the next day, December 18, I was ready to proceed with the balloting for those two Senators. When Senator Gunn introduced his resolution to elect the two, and immediately thereafter to elect the third, I voted for the resolution simply because some friend asked me that morning to do so as a favor to himself, and without thinking at the time that it cut any particular figure one way or the other; afterwards when I realized that it was an important matter, I was very sorry that I had made the promise, or voted for it. After Governor Shoup was elected and the motion made that the joint assembly adjourn, I voted for this motion, being entirely satisfied from my knowledge of the feeling of Mr. Dubois's supporters, that if an adjournment could be had for a period long enough to enable those who had signed the paper to reflect upon it and examine the question, that the combination could be broken and the Republican party saved the disgrace of an open repudiation of its platform. After the election of Mr. McConnell, when the second motion was made to adjourn, I voted against it because, seeing that it was impossible to obtain an adjournment by the previous vote which was taken as a test of the question of strength, and being a friend of Mr. Dubois, I felt that having done everything that I could up to that time to prevent the consummation of the scheme, my constituents would expect me to vote for Mr. Dubois when the matter was finally forced to the point of voting for or against him, and had it not been for what I knew prior to the meeting of the legislature to be the sentiment of my constituents, I would not have voted for him after he went into the combination, and in doing so I acted purely in a representative capacity.

Two days after this election, the legislature took a recess until January 5, 1891. I then returned to my home in Elmore County, and consulted the leading Republicans of the county and explained to them everything that transpired in connection with the Senatorial election. I told them that since the election I had examined the matter as carefully as possible in the light of discussion in the public press and otherwise, and had read the law of the United States relating to the election of Senators to fill future vacancies, and was satisfied that Mr. Dubois had not been legally elected, and stated that I had heard some rumors to the effect that the matter might be brought up again before the legislature was ended, and desired to know whether in case it was brought up again how the public sentiment of my county would stand on the subject. After hearing all the facts and circumstances, I was advised by every Republican, except one, whom I met, that in case a second election should occur, they would expect me to carry out the platform of the party and vote for Mr. Clagett, as against Mr. Dubois. And when the second election did occur in February, after the drawing, I supported him for that position, from the time it was agitated down to the time of his election.

And further I say not.

MARTIN KING.

Sworn to before me and subscribed in my presence by the said Martin King on this 16th day of February, 1891.

[SEAL.]

JONAS W. BROWN,
Notary Public.

STATE OF IDAHO, *County of Ada*, ss:

I, J. C. Martin, first duly sworn, do say under oath that I am 46 years of age, a Republican in politics, and a representative of Latah County in the present session of the legislature of Idaho. That long before the Republican State convention met in August, 1890, all through north Idaho, and also in portions of south Idaho, through the public press and otherwise, the public sentiment was aroused in favor of giving equal representation in the United States Senate to the two sections of the State. That when the Republican State convention met at Boise, as the result of long and earnest discussion, the party placed in its platform a plank declaring that justice to all sections of the State required that one of the United States Senators should be taken from north

Idaho; that this was and was understood to be a party pledge to that effect and entered more prominently into the canvass than any other one proposition, and on this pledge the Republicans succeeded in carrying every county north of the Salmon River Range, and sending an unbroken Republican delegation to the legislature, although all of the counties of north Idaho, with the exception of Latah, were either Democratic in sentiment or exceedingly doubtful.

I do further say that from my knowledge of the facts attending that election that it was due to this plank in the platform that the State went Republican; that it is a matter of public knowledge that the Democratic party in that campaign intended to place such a plank in their platform, and to make their principal fight to carry the State in the northern portion of it; that the Republican convention met first and anticipated the action of the Democratic convention by placing it in its platform, and that it was thereafter followed by the Democratic convention when it met, so that both parties were pledged to this proposition; that when the canvass opened the pledge of the Republican party was taken up by the great mass of the Republicans with the greatest enthusiasm, so that at an early portion of the canvass it became evident that north Idaho would go overwhelmingly Republican; and when this fact became evident, the Democratic managers lost confidence in their canvass and did not make, as I am informed and believe, even a vigorous canvass in the southern portion of the State, whereby the State was carried for the Republican party.

That when I came to Boise City to attend the legislature I did so especially for the purpose of seeing this pledge carried out in good faith by the election of some bona fide residents in North Idaho to one or two Senatorships, which at that time and theretofore were supposed to be only two that were to be filled; that when the drawing of the Wyoming Senators after the election took place, it was ascertained that in all probability one of the two Senators would go out on the 4th of March, 1891, and this fact was taken advantage of by Messrs. Shoup and Dubois when they found that by their combined strength they did not have a majority of the legislature, to start the third Senator proposition in the hope that they would thereby be able to obtain sufficient votes from some northern candidate, which, added to their own, would give them a majority, taking such northern candidate into the combination, upon a distinct understanding that Mr. Dubois should be elected to the 6-year term at this session of the legislature. I found that it was impossible to break the combination which Messrs. Shoup and Dubois had formed, although every effort was made to detach them one from the other, and induce them respectively to carry out in good faith the platform of their party, upon which one of them had received the suffrages of a majority of the people. Finally, on the afternoon of December 17, 1890, I was told by Mr. Brown, Mr. McConnell's nephew, who was largely managing his Senatorial canvass, that a combination would be formed for the purpose of electing Messrs. Shoup and McConnell for the short terms to fill existing vacancies, and Mr. Dubois for the term beginning March 4th, 1891; and that evening I met at Mr. McConnell's room Messrs. Wells, Green, Skatteboe, Brigham, and Wing, members from North Idaho, and Senator Gunn from South Idaho, who seemed to be managing the combination as among the members on behalf of Mr. McConnell. Mr. Wing refused to have anything to do with it, and shortly left.

A paper was gotten up in Mr. McConnell's room which I read and signed; the purport of the paper was that Mr. McConnell should be elected first, Governor Shoup second, and that when the proper time came, fixed by law, Mr. Dubois was to be elected. At the same time that this paper was being prepared and signed in Mr. McConnell's room, another paper, as I was informed, was being prepared and signed by the supporters of Mr. Dubois in the adjoining room occupied by Mr. Dubois, and I saw the gentlemen who were known as Dubois men all gathering into that room for such purpose. After we had signed the paper in Mr. McConnell's room, Mr. Brown took it out into the room of Mr. Dubois, from which he returned and told us that Mr. Dubois' friends had signed a paper, which, as a friend of Mr. McConnell, he would not consent to; that Senator Shoup, from Custer County, a brother of George L. Shoup, refused to accede to the proposition to elect Mr. McConnell first, and insisted upon it that his brother should be elected first; and that the paper which had been signed in Mr. Dubois' room was one that he would not consent to have the friends of Mr. McConnell sign; that Mr. Brown then returned to Mr. Dubois' room and after a while came back into Mr. McConnell's room and informed us that he had dictated a new paper for Mr. Dubois' supporters to sign, and that they were then engaged in signing the same, and that some of Mr. Dubois' supporters had left for the night and they were hunting them up to get them in to sign this second paper. The paper written in Mr. McConnell's room, signed by his friends, and myself among the number, was destroyed, and we afterwards, on the same night, signed the second paper drawn in Mr. Dubois' room and stated by Mr. Brown as having been dictated by him.

The only difference that I remember between the two papers was that instead of electing Mr. McConnell first and then Governor Shoup, it was changed to elect Governor Shoup first and then Mr. McConnell, and it was also understood that we

were to elect on the next day Governor Shoup and Mr. McConnell only, and were to elect Mr. Dubois when the time prescribed by law should arrive for electing the third senator. I did not read the paper signed by Mr. Dubois' friends and then brought to Mr. McConnell's room and signed by us; the paper was read in our presence by Mr. Brown, and its purport was as I have previously stated, that Mr. Dubois was to be elected, not at that time, but when the time arrived prescribed by law for the election of the third senator. It was understood that Mr. Dubois was to take his chances on being able to hold the combination together until this time should arrive, and I for one believed that it was utterly impossible for the combination to exist long enough to allow the second Tuesday after the meeting and organization of the legislature to arrive. If it had been proposed that Mr. Dubois should be elected immediately after the other two, I would not under any circumstances have gone into the arrangement, because I knew such election to be contrary to law, and also because, as a North Idaho man, I knew that if we elected the third senator at the same time as the other two it would endanger the result of my section of the State having any representation after March 4, 1891.

The above is the understanding which I and other supporters of Mr. McConnell who signed the paper had, and we never had any idea that it was contemplated to elect the third Senator immediately after the two vacancies were filled, until Senator Gunn offered the resolution to that effect in the joint assembly on the next day, December 18, 1890. I was taken completely by surprise by this resolution of Senator Gunn, and when Judge Gray, in the joint convention, offered his substitute to limit the election to the two Senators only, I voted for it, and voted against the passage of the resolution, and in favor of the motion to adjourn after the election of Mr. McConnell. After the second motion to adjourn was voted down and the joint assembly proceeded to vote for the third Senator, I voted for Mr. Dubois because the previous votes on the substitute and the adjournment showed that we could not prevent the third Senator from being voted for at that time, and I did not look upon the vote as amounting to anything, for the reason that his election was manifestly illegal, as I believed, on account of its violation of the acts of Congress relating to the election of a Senator to fill a future vacancy; and even then I would have voted for Mr. Clagett instead of Mr. Dubois for this third term, because of the trickery which had been practiced upon me and other friends of Mr. McConnell in the legislature in bringing on this election in violation of law, if I had not known that my vote, and others also who were in favor of Mr. Clagett, could not change the result.

I do further say from the facts above stated, and from all the circumstances attending and surrounding the so-called election of Mr. Dubois, that he owes his election, if elected at all, to a palpable violation of the laws of the United States, and that without such violation he could not have been elected; from my knowledge of the hostility existing between Messrs. McConnell and Dubois and many of their respective supporters, I am entirely satisfied that had the agreement been carried out to wait until the time came around prescribed by law for electing the third Senator, that long before this time arrived the combination would have dissolved by its own inherent weakness, and it was because of this knowledge evidently on the part of Mr. Dubois that they either changed the programme after I and other of Mr. McConnell's friends had signed the paper, or else he had deliberately obtained our signatures by false and fraudulent representations made to the effect that he was willing to take his chances of holding the combination together until the regular time prescribed by law for electing the third Senator.

I do further say that when Mr. McConnell drew the term ending March 4, 1891, and that had come to pass which I had always feared, that after that date north Idaho would be without a Senator; and the platform of the Republican party was dishonored, believing as I did that the interests of my State and the preservation of the good faith of the party were of paramount importance to all other considerations, and further believing that Mr. Dubois had not been legally elected, when it was proposed to hold a second election for a Senator to succeed William J. McConnell, I supported the movement, and voted for Mr. Clagett at all stages of the contest.

To summarize the whole matter, I came to Boise to get equal representation in the Senate for my section of the State. On account of the combination between Messrs. Shoup and Dubois, it was impossible to get it as it was pledged, and I was forced to take the step that I did in order to get the only thing that was possible as it seemed to me at that time, namely, a chance for north Idaho to draw a Senator; and when I found that this drawing, however brought about, left us completely out in the cold, I was determined, if possible, to still secure the principal object of my coming to the legislature, in the election of some northern man, so that our local interests might be protected and the good faith of the party kept intact. And further I say not.

J. C. MARTIN.

Subscribed in my presence and sworn to before me by the said J. C. Martin, on this 16th day of February, 1891.

[SEAL.]

JONAS W. BROWN,
Notary Public,

STATE OF IDAHO, *County of Ada*, ss :

William Wing, being first duly sworn, says under oath that he is 43 years of age, and a senator from the fourth senatorial district of Idaho, comprising Latah and Nez Percés Counties, in the present session of the legislature. That so far as relates to the election of United States Senators, I came to Boise City unpledged except by a resolution of the county convention of Latah County favoring William J. McConnell for first choice; that I was not at any time asked to define my position with regard to second choice except on the night or evening previous to leaving Lewiston for Boise City, when one person asked me how I stood in relation to Mr. Dubois's candidacy, and I said to him that if Mr. Dubois did not oppose the election of one Senator from the northern portion of the State as provided in the platform of the Republican party, that I could consistently support him, but if he did oppose that part of our platform, I would under no conditions support him. That upon arriving at Boise City I found the sentiment of the press so far as represented in the Boise Statesman, which was advocating Mr. Dubois's interests, to be that north Idaho did not claim or ask the carrying out of that part of the platform, and I found him in every way at all times opposing the interest of the party in his opposition to that part of the platform, and from that I considered myself entirely at liberty so far as my second choice for Senator was concerned.

When the concurrent resolution to elect two Senators passed the senate, I had no idea or expectation that in that joint convention provided for by that resolution a third Senator would be elected, and went into that joint convention expecting to elect two Senators and no more; that by the introduction of a resolution in that joint convention to elect a third Senator I found that it was the intention to bring on an election of the third Senator immediately after the election of the Senators to fill the two vacancies then existing and before the second Tuesday after the organization of the legislature. Senator Gray offered a substitute to this resolution, the effect of which was to limit the election to the two Senators to elect whom the original concurrent resolution had been passed; I voted in favor of that substitute; my vote is recorded in the journal as voting against it; when the substitute was voted down, the question recurred on the original resolution, which I voted against, but I am recorded in the journal as voting in favor of it; after the election of Governor Shoup I voted against the motion to adjourn, and am correctly recorded in the journal; I voted against this first motion to adjourn because we were there to elect two Senators, and the assembly having chosen to proceed with the election I did not consider that I was doing anything else except proceeding under the concurrent resolution.

After the second Senator was elected I voted in favor of the motion to adjourn and am so recorded in the journal; that I did not know until yesterday that I was recorded in the journal of the house as having voted against the substitute and in favor of the resolution, and I say without qualification or possibility of mistake that these two entries of my vote in the journal of the house recording the proceedings of the joint assembly are absolutely false; I intended to vote and did vote against every proposition that looked or tended in any way to the election of the third Senator prior to the time fixed by law; that my attention was called to the matter yesterday for the first time; the senate journal of December 19 contained no entries showing what had transpired in the joint assembly the day before, and the entire record was made up and kept in the journal of the house only. Had the senate journal contained entries of the proceedings of the joint assembly as appear to have been entered on the journal of the house I would on the 19th of December have discovered the error, if it was an error, instead of a willful falsification of the fact as I believe it to be, and had the same corrected; and I believe that this entry in the house journal of my vote, on tally, so far as I know having been kept except by Clerk Reed in the joint assembly, was purposely made to show that a majority of the senate in the joint assembly voted in favor of the resolution to elect the third Senator immediately after the others, Charles H. Reed, the clerk of the house, being a bitter, uncompromising, and unscrupulous partisan of Mr. Dubois.

After the election of the two Senators, to elect which the joint assembly was convened, I voted to adjourn, as I did not believe that under the law of the United States regulating elections of Senators the time had arrived for such election, and because it was impossible for me to tell who would draw the short term, whether it should be the Senator from the northern part of the State or from the southern part, for if by any chance Mr. McConnell should draw the term ending March 4, 1891, north Idaho would be left without a Senator, and if Mr. Shoup should draw the term ending March 4, 1891, I believed it to be the choice of south Idaho that he and not Mr. Dubois should be returned. But in any event I did not intend to leave north Idaho without a Senator as provided by the Republican platform of the State, nor take any steps that would jeopardize the interests of that section and the good faith of the Republican party. When this resolution offered and passed in joint convention was carried out by a vote for the third Senator, believing such vote to be illegal and void, I

was entirely indifferent as to who I voted for, and contemplated voting for a fictitious person, but believing it cut no figure one way or the other voted for Mr. Dubois. On the ballots taken under the first concurrent resolution, which I believed to be legal, I voted for William J. McConnell on the two separate ballots taken thereunder, as it was my purpose that a northern Senator should be elected, and finding that Messrs. Dubois and Shoup were opposed to that proposition, found my only safety lay in electing a northern Senator first. Believing at all times that the party platform was obligatory on every Republican, and the peculiar position of our State being such that a Senator from the northern portion was very important to our part of the State, I was opposed to any measure which should jeopardize our interest or violate our pledges and was desirous that the Senators elected under the constitution should have time to proceed to Washington and draw for terms, so that it might be known whether the Senator from the northern portion of the State or from the southern portion would draw the short term, so that we might elect his successor from whichever portion of the State the Senator who should draw the term ending March 4, 1891, might come, and I should have opposed this resolution which was offered and passed in joint convention if the same had been proposed in the senate, voting separately until such time as we could know the facts with regard to the drawing for terms, that we might conform our action to that result.

That this resolution could not have passed the senate is certain because that body consists of 18 members, and 9 were opposed to any election of Senator to fill the term beginning March 4 next, until such time as the drawing of terms should determine which portion of the State should be left without a Senator, or at least before the time that was fixed by law for electing, namely, the second Tuesday after the organization of the legislature, and this is shown by the fact that 9 senators voted against the resolution of Senator Gunn in joint assembly (although the journal shows only 8), and these 9 votes, being one-half of the senate, would have prevented the passage of the resolution; and that if the law had been complied with by taking a vote for the election of the third Senator in the two Houses, acting separately, or in waiting until the second Tuesday after the organization of the legislature, Mr. Dubois could not have been elected, and he owes his election to this failure on the part of the legislature to comply with the law.

Up to the evening of the 17th day of December last I had no reason to believe that the election of United States Senators from Idaho would be conducted otherwise than in all fairness to the four Republican candidates in the field; but on the evening of the 17th of December I was invited to attend a meeting, without knowing in full the purpose of that meeting; when I arrived at room number 1 in the Capital Hotel in Boise City where said meeting was to be held, the room being occupied by William J. McConnell, I found there congregated certain members of the legislature, who proposed then and there to draw up a paper obligating those present to vote on three separate ballots the following day for three United States Senators; on the first ballot to elect Mr. Shoup, on the second ballot to elect Mr. McConnell, to fill the existing vacancies, and at some future time, no one stating when in my presence or hearing, to elect Mr. Dubois on the third ballot, to fill a vacancy which should exist from and after March 4, 1891, and for the term of 6 years. To this proposition I refused to accede or to any proposition which should look to the election of any person to fill a vacancy until after the drawing of terms of the two Senators elected to fill existing vacancies; that I immediately left the room, but upon returning after about three-quarters of an hour, it was then stated to me by Mr. Green, a member of the house of representatives from Latah County, that all the others (supposing he meant those who had been present when I was formerly present in the room) had signed the paper and I had better sign it—at the same time putting his hand in his pocket as though attempting or about to draw out a paper for me to sign—but that I peremptorily refused to have anything to do with it, and he did not take a paper from his pocket.

The invitation which I received to attend this meeting at Mr. McConnell's headquarters came from a friend of Mr. C. McConnell, and was not accompanied by any explanation of the object of that meeting, but being immediately desirous of knowing the object of the meeting, I met in the hallway of the hotel Mr. Skatteboe, who is a member of the house of representatives from Latah County, with whom I was acquainted, and I asked him to tell me the object of that meeting; that he informed me of its object, to elect Mr. McConnell, Mr. Shoup, and Mr. Dubois as United States Senators, and that an agreement would be made and entered into for that purpose by those who were in attendance at that place; that I told him I was opposed to it and should oppose it if I went into Mr. McConnell's room, and he suggested that perhaps I had not better go in if I was opposed to the proposition, but I insisted that I had a right to know all that transpired with regard to the election of United States Senators, as well as any other legislative matter, and insisted on going in; and I found in passing from where I had this conversation with Mr. Skatteboe, that the friends of the respective candidates, Mr. Shoup and Mr. Dubois, as I passed their rooms,

were gathering in for some purpose, and it was stated in Mr. McConnell's room that they were then engaged in signing an agreement similar to that which was proposed in my presence to be written out.

I had up to the evening of the 17th of December supposed and believed that any combination which would result in electing Mr. McConnell and Mr. Dubois as United States Senators could not be effected because of the outspoken hostility of Mr. McConnell toward Mr. Dubois, and I heard him repeatedly state that he would enter into no arrangement by which Mr. Dubois and himself should be elected as United States Senators, because the feeling existing between them would preclude them from acting harmoniously together.

When the question of electing a successor of Mr. McConnell came up in the legislature in February, 1891, believing, as hereinbefore stated, that the election of Mr. Dubois was illegal and void, and believing that that part of the Republican platform which provided that North Idaho should be represented in the Senate of the United States by a norther Senator was an obligation resting upon the party, the same having been advocated during the political canvass by myself and being urged by me as a reason why north Idaho should present a solid Republican representation in this legislature. I favored this movement and the election of Mr. Clagett, because he was a north Idaho man, acquainted with our interests and abundantly able to look after our affairs in the Senate of the United States, and further because of Mr. McConnell's connection with this deal in which he had jeopardized our interests and betrayed his party, leaving north Idaho without a representation in the United States Senate, I could no longer have supported Mr. McConnell to succeed himself. And further I say not.

WILLIAM WING.

Sworn to before me and subscribed in my presence by the above named William Wing, this 17th day of February, 1891.

[SEAL.]

JONAS W. BROWN,
Notary Public.

STATE OF IDAHO, *County of Ada*, ss :

I, B. J. Briggs, being first duly sworn, do say under oath, that I am 31 years of age, a Republican in politics, and a member of the present Idaho legislature from Bingham County, in south Idaho; that the Republican county convention of Bingham County met after the State Republican convention had adjourned, and placed in its platform a plank to the effect that one of the two Senators to be chosen should come from north Idaho; that at that time it was not understood that there were to be more than two Senators, and I understood, as it was understood by all, that this resolution in the State platform pledged the party to equal representation of the two sections in the Senate of the United States. Shortly before the meeting of the county Republican convention in Bingham county, Mr. Patrie, who was afterwards the chairman of the county Republican central committee, and who was Mr. Dubois's principal manager in the senatorial election in December last, handed me a paper, which was subsequently adopted by the county convention of Bingham County as its county platform; that I was a member of the committee on resolutions in that county convention, and submitted, at the request of Mr. Patrie and as coming from him, this paper; that one of the resolutions of this county platform pledged the delegation in the legislature to support Mr. Dubois for the United States Senate. So that taking the two platforms together, the Republicans in Bingham County were pledged to support Mr. Dubois as the Senator from south Idaho, and were also pledged to support some person from north Idaho for the other senatorship.

When I came to the legislature I was in favor of the election of Mr. Dubois from the south and Mr. Clagett from the north, but in consequence of the combination entered into between Messrs. Dubois and Shoup, and the difficulties which were created by that combination, I found it impossible at that time to carry out my wishes and to completely fulfill the obligations of the platform. Messrs. Dubois and Shoup together had 23 or 24 votes, lacking only a few of a majority. In order to secure this majority they subsequently took into the combination William J. McConnell, of north Idaho, with the understanding that he should be elected to fill one of the vacancies and that Mr. Dubois should be elected for the full term beginning March 4, 1891. At the time the legislature met I was not personally acquainted with Mr. Dubois and knew but very little of him except what I had seen in the newspapers, most of which was complimentary of him. I believed him to be a sincere and ardent Republican, devoted to the interests of the party, and for that reason, and because of this pledge in the county Republican platform, I supported him and went into the combination, although with the utmost reluctance, in part because of my opposition to Mr. McConnell, from the north, by which Mr. Dubois was to be elected for the long term and Messrs. Shoup and McConnell to fill the vacancies.

That I am a farmer by occupation and know nothing of law, and when the legality of electing the third Senator was raised in the joint assembly on December 18 the two lawyers in the legislature, Mr. Lyttleton Price as the champion of Mr. Dubois, and Judge Gray as championing the other side of the question, argued the matter of the legality of the election to a considerable extent. Not being a lawyer I was unable to form any opinion of my own in view of the fact that the two lawyers in the legislature were of directly contrary opinions, and for that reason I naturally sided with the attorney who represented the agreement which I had made. I therefore voted for the resolution of Senator Gunn, and voted to carry through the entire understanding as set out in the paper which was signed on December 17, 1890. I was the better able to do this for the reason that I believed that under the circumstances as they existed it was the best that could be done in the direction of keeping the pledge contained in the Republican platform, my own idea always having been if I had been free to carry it out that the two Senators should be first elected, and after the drawing for terms that then the successor of the man who should draw the short term, whether from north Idaho or south Idaho, should be taken from his section.

After the election was over the result was received by the people and public press of the State either with extreme coldness or open condemnation. I do not know of but one paper in the State, namely, the *Boisé Statesman*, Mr. Dubois's special organ, which advocated and upheld the result, and in consequence of the criticisms that were made upon the action of the legislature and the general opinion expressed to the effect that the election of Mr. Dubois was not legal, I proceeded to investigate the matter to the best of my ability, making inquiries with reference to the legal points involved, and in connection with this, and about the same time, having been fully advised of all of the little matters attending the election, and of which I was in a large part ignorant of at the time the election was held, I came to the conclusion that the policies and methods of Mr. Dubois were of such a character that I looked upon him as the worst enemy which the Republican party had in the State of Idaho. In other words, I ascertained to my entire satisfaction that he was the head of an established ring of office-holders and office seekers in the State, and that he was using and had used the Republican organization virtually and solely for the purpose of promoting his private ends. For these reasons, when it was afterwards contemplated to hold another election, and especially after Mr. McConnell had drawn the term ending March 4, 1891, by which north Idaho after that date had no representative in the Senate, I advocated the election of Mr. Clagett from north Idaho, because I believed that it would be to the interests of the State at large, and also because it was necessary to take some action in order to prevent the practical dissolution of the Republican party, the general opinion appearing to be throughout the State that the party through its representatives had repudiated its promises.

And further I say not.

B. J. BRIGGS.

Sworn to before me and subscribed in my presence by the said B. J. Briggs on this 16th day of February, 1891.

[SEAL.]

JONAS W. BROWN,
Notary Public.

STATE OF IDAHO, *County of Ada*, ss :

H. M. Casey, being first duly sworn, says under oath that he is 41 years of age, and a representative in the present Idaho legislature from Kootenai, the northernmost county in the State; that between the northern and the southern sections of the State, owing to the geographical situation of the sections, there is no business connection whatever with the exception of those who have occasion to attend the sittings of the supreme court and sessions of the legislature, and it is very seldom that the citizens of the two ends of the State respectively ever have occasion to visit the other; that in consequence of this condition, and for the purpose of drawing the people of the two sections of the State together in mutual sympathy and support, after the State was admitted into the Union, the Republican platform provided as one of its planks that one of the two Senators should be taken from the northern part of the State, which at the election polled nearly 7,000 of the 18,000 votes; that four of the five northern counties are naturally Democratic, namely, the counties of Shoshone, Kootenai, Nez Percé, and Idaho, that is to say, Shoshone, Nez Percé, and Idaho are conceded to be Democratic counties, while Kootenai is doubtful; that in consequence of this plank in the Republican platform by which the people of our section of the country were assured protection to their material interests in the Senate of the United States, north Idaho sent an unbroken Republican delegation to the legislature.

When I came to *Boisé* I did so with the determination as a Republican to carry out the platform of the party, and secure to our section of the State a representation in

the Senate of the United States. Mr. McConnell and Mr. Clagett are both residents of north Idaho, and Mr. McConnell, living in the adjoining county of Latah, primarily received my support, Latah and Kootenai Counties being in one senatorial district and the Republican county convention of Latah County having expressed a preference for Mr. McConnell. For this reason among others I labored for the election of Mr. McConnell, although Mr. Clagett as a matter of personal preference was my first choice.

When the joint assembly convened under the concurrent resolution to elect Senators, as provided by law, it was understood by me, and so far as I know by every other member of the legislature, that its action was limited to the election of the two Senators to fill existing vacancies, and when the resolution on December 18 was introduced in the joint assembly to proceed immediately after the filling of the two vacancies to elect the third Senator, it was a usurpation of power on the part of the joint assembly, and, with the exception of those members who had entered the combination of Shoup, McConnell, and Dubois, was a profound surprise. Although I knew the combination had been formed as is hereinafter stated, I did not know the precise method by which it was intended to be carried out by the offering of the resolution in the joint assembly. This combination was strongly opposed by myself as one of the friends of Mr. McConnell, and I refused to have anything to do with it, and when I found that Mr. McConnell was determined to unite with Dubois and Shoup in the joint assembly of December 18, I cast the first two ballots in favor of Mr. Clagett as against Governor Shoup and Mr. McConnell, and on the third ballot, seeing that I could do Mr. Clagett no good by voting for him at that time, I cast my vote in favor of Mr. Dubois, for the reason that there were many persons in Kootenai County who favored him as the Senator from south Idaho, Mr. McConnell, a representative of north Idaho, having already been elected.

On the afternoon of the 17th of December, about 3 o'clock, Mr. McConnell's friends were invited to his headquarters. I went there and found Messrs. Green, Skatteboe, Martin, and Brigham, members of the legislature, and Mr. Brown, a relative of Mr. McConnell, who took a very active interest in his election. Mr. Brown stated to us that in a short time Captain Wells and Captain Gunn would be there, and they would have a proposition to place before us. Captain Wells is the joint senator from Kootenai and Latah Counties and Captain Gunn a senator from Alturas County, in the legislature. When they came they laid this proposition before us: That they had agreed to go in with Messrs. Shoup and Dubois and elect three senators; Shoup and McConnell were to be elected for the two short terms, and draw for their terms, and Mr. Dubois was to be elected for the long term. Captain Gunn stated that it was necessary to go in with Shoup and Dubois, because it was the only way in which north Idaho could get a Senator. No objection was made by any of those present until I was consulted, when I refused to have anything to do with such a combination, telling them that so far as those terms were concerned we could elect a wooden man according to that, and then take our hats and go home and get as good as they offered us. My objection to the whole business was that the Republican platform had promised in effect equal representation in the Senate to the two sections, and I for one did not propose to bring reproach upon my party, nor to sacrifice the interests of north Idaho, by carrying out a trade, as I understood it to be, between candidates who had theretofore been hostile to each other, and which left the interests of my section of the State and the good name of the Republican party to depend purely upon a question of chance; that I had heard Mr. McConnell many times speak in the most bitter terms of Mr. Dubois, and say he would rather cut off his right arm than to enter into any arrangement with him, and he said at one time, "I may not be elected, but there is one thing I can do: I will stop Dubois from being elected."

In the joint assembly on December 18 I voted against the resolution to elect the third Senator for the reasons that caused me to refuse to have anything to do with this combination, and the additional reason that I knew that the election of the third Senator at that time was contrary to law, because the legislature was organized on Tuesday, December 9, 1890, and the second Tuesday thereafter fell on December 23, 1890; and also believed from the debate in the joint assembly, in which Judge Gray spoke the sentiments of the minority and whose leadership we followed, that the election of the third Senator at that time was illegal because the two houses by the adoption of the resolution in joint assembly had been deprived of the right given to them by the act of Congress to take a separate vote in the two houses acting separately.

During the entire senatorial canvass, after I found that Messrs. Shoup and Dubois had combined to defeat the platform, I was determined, if possible, not only to elect a Senator from north Idaho, but to elect him before the one from south Idaho should be elected, because when I saw that the friends of Messrs. Shoup and Dubois in the legislature were willing to sacrifice the Republican party in the interest of two men I was afraid to trust them to elect a northern man after they had succeeded in electing one Senator from the south, believing as I did that if they had ever elected a south-

ern man first they would have followed it up if they could do so by electing both Senators from that section.

I always believed that Mr. Dubois was not elected, because his election was secured in violation of the laws of Congress, and after Mr. McConnell drew the short term, leaving north Idaho without a Senator after March 4, 1891, I embraced with eagerness the opportunity to elect his successor by choosing some other citizen of north Idaho, and thereby protecting the interests of our section and at the same time preserving the good faith of the Republican party. For this reason, and for this reason only, I worked and voted for Mr. Clagett at the time of the second election.

And further I say not.

H. M. CASEY.

Subscribed and sworn to before me this 16th day of February, A. D. 1891.

[SEAL.]

JONAS W. BROWN,
Notary Public.

STATE OF IDAHO, *County of Ada, ss:*

I, S. A. Swanger, being first duly sworn, say under oath, that I am 60 years of age, a Republican in politics, and a member of the house of representatives in the present session of the legislature of Idaho, representing Custer County, in the southern part of the State. That I was a delegate in August, 1890, to the Republican State Convention which met at Boise City, and was also a delegate to the county convention of Custer County, which convened after the adjournment of the State convention. That, in the State convention, the resolution declaring in substance that justice to all sections of the State required that one of the two Senators to be elected should be taken from north Idaho was earnestly and fully debated and adopted by a vote of 61 to 39, and, after adoption, by the unanimous vote of the convention added to the platform as a part thereof. That Lemhi and Custer Counties adjoin each other; that Governor Shoup is a resident of Lemhi County, and his brother, James M. Shoup, a resident of Custer County; and that the universal public sentiment in Custer County at the time of the two Republican conventions met was in favor of Geo. L. Shoup as one of the two senators who at that time, we all understood, were to be elected, and only two.

I came to Boise about 2 weeks before the legislature met, and remained there until it met. Recognizing the binding effect of the pledge contained in the Republican platform, I was in favor of electing Governor Shoup from the south end of the State and Mr. Clagett from the northern end, and labored to accomplish that result. That when the combination was finally formed between Messrs. Shoup and Dubois and McConnell I found that it was impossible, as it seemed to me at that time, to secure the election of Governor Shoup and carry out the wishes of my constituency without acquiescing in the arrangement. I felt at liberty at the time to do so for the reason that Mr. McConnell, a north Idaho man, was embraced in the combination, and his election on the basis of electing three Senators would at least be a partial compliance with the terms of the Republican platform of the State.

On the night of December 17, 1890, the arrangement was finally consummated, and I signed a paper which I did not read, but which I was informed purported to be a paper by which we were to elect Messrs. Shoup and McConnell to fill existing vacancies, and Mr. Dubois the term beginning March 4, 1891. That when the matter first came up that evening, I was told that Mr. McConnell's friends insisted upon electing him first; and as the only idea that I had in going into the arrangement was to make the election of Governor Shoup absolutely sure, I told them that if they did so I would have nothing whatever to do with it; that I wanted Governor Shoup elected first or I would not support either Mr. McConnell or Mr. Dubois. The paper was then drawn, as I was told, to elect Governor Shoup first and Mr. McConnell next.

Pursuant to this arrangement, when the joint assembly met on December 18 I voted for the resolution offered by Senator Gunn, and supported the proceedings all the way through, down to and including the election of Mr. Dubois.

Prior to the meeting of the joint assembly on December 18 I had heard the question discussed at various times as to whether three Senators could be elected at the same time, and I heard of telegrams having been received from Senators in the United States to the effect that they could be. I had no doubt myself but that they could be so elected, provided they were elected in the manner pointed out by law; but so far as the election of Mr. Dubois was concerned there was no separate vote taken in the two houses, no concurrent resolution passed by the two houses to that effect acting separately, and it was in advance of the second Tuesday after the meeting and organization of the legislature.

My object was to secure the election of Governor Shoup. I knew that the election of the two Senators to fill existing vacancies was legal, because we were pursuing the legal course pointed out by the constitution of the State, and the concurrent reso-

lution under which the joint assembly met. I did not believe that the election of Mr. Dubois was legal even when I voted for him; but, as I understood it, he was willing to take his chances on that. And as thereby I could secure the election of Governor Shoup and carry out the ardent wish of my immediate constituents in Custer County I voted to carry out the whole programme, leaving Mr. Dubois to take care of his own interests in the future.

The election of Mr. Dubois, under the circumstances, was not received with favor by the Republicans of the State generally, and afterwards when Mr. McConnell drew the short term ending March 4, 1891, and it became manifest that after that date north Idaho would be without a representative in the Senate, and the Republican party would stand before the people as not having kept in good faith its party pledge, I was desirous of doing everything that I could to remove the bad impression and effect which the so-called election of Mr. Dubois had upon the party in the State. And for that reason I advocated and favored the holding of a new election, and voted for Mr. Clagett as a north Idaho man to fill the term beginning March 4, 1891, and leave to the Senate of the United States the duty of determining as to whether he or Mr. Dubois is entitled to a seat.

The whole trouble about our senatorial matters here grew out of the fact that Mr. Dubois at all times claimed that he was entitled to and would have the term beginning March 4, 1891, and that he would be elected in advance of the drawing for terms by the two Senators elected to fill existing vacancies. Had it not been for his determination to this effect, the complications in the situation here in Idaho would not have arisen. I did not believe that Mr. Dubois, nor anyone else, had a right to dictate to the party as to who should fill any office within its gift, but he had sufficient force in the legislature to force through his plan of action in the manner hereinbefore stated. Prior to the meeting of the legislature I was barely acquainted with Messrs. Dubois, Clagett, and McConnell, and the first time that I got down on Mr. Dubois was when I saw that through his selfishness he was sacrificing the interests of the Republican party and of the State to promote his own personal ambition. And this consideration acted very strongly upon my mind in inducing me to favor the second election, in addition to the other reasons which I have previously stated.

And further I say not.

S. A. SWAUGER.

Sworn to before me and subscribed in my presence by the said S. A. Swauger, on this 16th day of February, 1891.

[SEAL.]

JONAS W. BROWN,
Notary Public.

STATE OF IDAHO, *County of Ada*, ss :

I, Walter H. Smith, being first duly sworn, say under oath, that I am 50 years of age, a representative in the present legislature of Idaho from Ada the capital county of the State, and in politics am a Republican.

That the Republican party at the State convention which met in August, 1890, placed in its platform a resolution declaring that justice to all sections of the State required that one of the Senators to be elected should be taken from north Idaho; that I recognized the justice and expediency of this action, and thoroughly and heartily supported it from the beginning.

When I came to the legislature my first choice for Senator from the southern part of the State was Governor Shoup, and as between the two candidates from north Idaho, my preferences were for Mr. Clagett. I voted for Governor Shoup in December when the vote was taken in the two houses acting separately, and also voted for him on both ballots on December 17, the first day the joint assembly met. When on the night of the 17th of December I learned that he and Messrs. McConnell and Dubois had entered into a combination to elect themselves on the terms and conditions that they did, I looked upon it as a transaction which I would not countenance nor support, and which I was violently opposed to, because it was a repudiation of the platform of the Republican party.

During the canvass preceding the election I was in and out of Mr. Dubois' headquarters frequently and was familiar with the sentiments, I think, of every one of the 18 men who were known as Dubois men, and that many of them were violently hostile to Mr. McConnell and expressed the utmost contempt for him, and declared that room, where all of his friends were congregated, and where nearly if not quite all of under no circumstances would they ever vote for him. I remember in particular one occasion, which, I think, was about December 15, when I was present in Mr. Dubois' them declared that under no circumstances would they ever vote for him as a Senator. And when I found out, on the night of December 17, that Messrs. Shoup and Dubois had taken him into their combination, I looked upon the whole transaction as a dead sell-out of many of the members supporting the three candidates, by which

the State was disgraced and the party dishonored. On the next day, December 18, when the joint assembly met, on account of my long-time friendship for Governor Shoup, I having served with him in the same regiment in the Army, I forgave him sufficiently his share in the transaction to vote for him on the first ballot, on which he was elected, and then voted for Mr. Clagett, as against Messrs. McConnell and Dubois.

Although I knew that this combination had been formed, I did not know until the joint assembly met that they were going to carry it out by the offering of a resolution to proceed with the election of the third Senator immediately after the first two were elected. This resolution offered by Senator Gunn took me entirely by surprise. The question at that time as to what the law was governing the election of a Senator to fill a future vacancy had not arisen, the concurrent resolution which brought us together having been, and been universally, understood to be a resolution for the election of the two Senators to fill the existing vacancies only. I understood that this legislature would be called upon to elect a third Senator sometime during the session, but when or how had never to my knowledge been brought up in discussion. When Judge Gray opposed the resolution of Senator Gunn, there was for the first time, so far as I know, a discussion as to the legality of electing the third Senator at that time, and without waiting until the second Tuesday after the organization of the legislature; and from this discussion I became satisfied that the whole proceedings were utterly null and void.

The result of the election in December was received by the Republicans of the State and the public press in a manner that satisfied me, if I needed to be satisfied, that the Republican majority of the legislature had made as grave a mistake as it was possible, and in my own county of Ada I heard, and heard of, a great many of the old stand-by Republicans declaring that they would never again vote a Republican ticket, because the party had proved itself so faithless to the promises it made to the people; and for a limited period of time I even felt myself as though I never would vote another Republican ticket, and remained of that opinion until it was suggested that Mr. McConnell had drawn the term ending March 4, 1891, and that a new election should be held to redeem the mistakes that had been made by the party in the first election. I eagerly embraced the opportunity to do so, and supported most heartily every movement in that direction, which finally resulted in the election of Mr. Clagett.

WALTER H. SMITH.

Sworn to before me and subscribed in my presence by the said Walter H. Smith, on this 18th day of February, 1891.

[SEAL.]

JONAS W. BROWN,
Notary Public.

STATE OF IDAHO, *County of Ada*, ss:

I, George W. Emory, being first duly sworn, do say under oath that I am a Republican in politics, and a representative from Custer County, in the southern portion of Idaho, in the present session of the legislature.

That when I came to the legislature at Boisé in December last I knew that the sentiment among the republicans of my county was that Governor Shoup should be one of the Senator selected; we at that time believing, as we had believed theretofore, that there were only two to be elected; the old settlers generally favored Governor Shoup, while those of more recent settlement inclined to Mr. Dubois. Not only myself, but, so far as I know, all of the Republicans in my county recognized the binding effect of the platform upon the party according equal representation in the Senate to the northern and southern ends of the State. In my county those who favored Governor Shoup as well as those who favored Mr. Dubois recognized the fact that both of them could not be elected without violating the platform.

Our county Republican convention met and sent delegates to the State convention, and afterwards reconvened and nominated the county and legislative tickets, and the platform adopted by the county convention in terms indorsed the platform which had been theretofore adopted by the State convention.

I made a thorough canvass of Custer County before the election in October, and visited every important precinct and nearly every precinct in the county, and that I never in a single instance heard any one question the fact that the platform with reference to the Senatorial question was binding upon every Republican.

When I came to Boisé to attend the legislature, as I was compelled to choose between Governor Shoup and Mr. Dubois. I favored the election of Governor Shoup from the south, and Mr. Clagett from the north. I found on reaching here that Governor Shoup and Mr. Dubois had combined together, and that Governor Shoup's canvass was being managed by his brother, Senator Shoup from Custer County, and although I labored assiduously with the friends of Governor Shoup, I utterly failed to cause

them to abandon the idea of electing both Shoup and Dubois at the expense of the Republican platform. That I attended a conference of the friends of Governor Shoup and Mr. Dubois, and it was announced and stated there in the conference by Mr. Dubois's friends that they did not consider the platform binding and would not be bound by it, and I stated to them that I did consider the platform binding, and my preference for the southern Senator was Governor Shoup, and as I stood firmly on that platform I believed in electing a northern Senator, and my choice was Mr. Clagett from the north, and that I should vote for those two men, which I did. I urged on the friends of Messrs. Dubois and Shoup at various times the fact that in my opinion if the platform of the Republican party was good enough to catch votes on, it was good enough to live by after the votes were gotten, and that if that part of the platform could be thrown aside, then any part of any platform could be disregarded by anybody.

When I found that the friends of Messrs. Shoup and Dubois were determined to violate the platform of their party I left the conference and never attended another. This conference was held after the legislature was organized, but its exact date I do not remember. Up to that time everybody seemed to be proceeding on the idea that there were to be but two Senators elected. The friends of Governor Shoup and Mr. Dubois found that they lacked a majority in the legislature, and about the time of this conference of which I have spoken, the idea of electing a third Senator began to be talked about to some extent. The friends of Messrs. Shoup and Dubois, for the purpose of electing those two candidates, found it necessary to take a north Idaho man into their combination, and they finally took in Mr. McConnell.

When the joint assembly met on December 18, 1890, and Senator Gunn offered his resolution to elect the third Senator immediately after the two were elected, I opposed and voted against the resolution, and against electing a third Senator at that time, for the reason that while I knew that this session of the legislature would be called upon to elect a third Senator, I also knew that they were not proceeding to elect him (on the 18th of December) in the manner and at the time provided by law. And for the reason that he was declared elected under proceedings that were taken in open violation of law, I am now and always have been entirely satisfied that his so-called election is totally null and void. While in the joint convention I voted for adjournments on the grounds already stated, and also because I believed that if the members of the legislature had a little longer time to think the matter over that they would not have elected Mr. Dubois and violated the platform, which belief was subsequently confirmed by the course taken by members at the second election after they had had full time and opportunity to investigate the question of Mr. Dubois's election. On every ballot taken for Senator in December I voted for Governor Shoup until he was elected, whether in the two houses or in the joint assembly, and on every ballot after he was elected I voted for Mr. Clagett.

The effect of the election in December was to create the feeling among lifelong Republicans of the State that on account of the violation of the party platform we had no show of winning in any future election, and so far as my knowledge extends this feeling affected the friends of Governor Shoup and Mr. Dubois themselves outside of a few who were willing to indorse anything that might be done by them on account of the strong personal interest they had in the result. And I believe, from a great many statements and facts which have come to my knowledge, that outside of what might be called the official class, consisting of office-holders actual and expectant, the result of that December election met with the almost universal disapproval of the people of the State.

Knowing as I did that when the Republican party had gone back upon itself by the action of a majority of its representatives in the legislature that it was sure to destroy the sense of party allegiance, which was impossible when its trusted leaders openly repudiated with contempt the professions of the party as contained in its platform, I favored strongly the holding of a new election to elect a Senator to fill the term commencing March 4, 1891. When the matter was brought up in February, 1891, I supported the movement for such election in all of its various phases until Mr. Clagett was elected; that I considered it my duty, not only to myself but to the Republican party and to the State, to use all honorable means to right the wrong that had been committed.

And further I say not.

GEO. W. EMERY.

Sworn to before me and subscribed in my presence by the said George W. Emery, on this 18th day of February, 1891.

[SEAL.]

JONAS W. BROWN,
Notary Public.

STATE OF IDAHO, *County of Ada, ss:*

I, Edwin C. Smith, being first duly sworn, do say under oath that I am 39 years of age, and a Republican in politics, and a State senator in the present session of the legislature of Idaho from Logan County, in the southern part of the State. That during the canvass preceding the popular election on October 1, 1890, it became manifest to me that a large majority of the Republicans of my county at that time favored the election of Mr. Dubois as one of the two Senators, it not being supposed until after the drawing for terms by the Wyoming Senators that there would be three to be elected by the present session of the legislature. I myself was a strong supporter of Mr. Dubois. I was only slightly acquainted with Mr. Dubois personally, and was not acquainted with the other three Republican candidates, and my support of Mr. Dubois was based upon the good opinion which I had of him as a representative man from the public press and the fact that my constituents also favored his election.

I further say that, owing to the manner in which he made his independent canvass, Mr. McConnell was exceedingly unpopular with the Republicans, or a very large number of them, in Logan County.

Personally I never approved of putting the plank in the Republican platform in favor of equal representation of north and south Idaho in the Senate, but when the State convention placed it there I acquiesced in it, and when I came to Boise City I intended, if possible, to secure the election of Mr. Dubois from the southern and some other person from the northern part of the State as the two Senators. Under all circumstances I was determined that Mr. Dubois should be elected. Matters ran along after the legislature convened, and there was a great deal of figuring done on various propositions, until finally the proposition was started to elect three Senators instead of two, giving Mr. Dubois the full term beginning March 4, 1891, and electing Governor Shoup and some northern man to fill existing vacancies and have them draw for terms. It seemed to me at the time that this plan offered an escape from the embarrassments under which I and other members of the legislature labored, and I adopted it for that reason. I made no trade of my vote whatever, but on the merits of the proposition, as I understood it, under the circumstances of the case, when the combination was formed to elect Governor Shoup and Mr. McConnell to fill the two vacancies and give Mr. Dubois the full term after March 4, 1891, I had no hesitation in agreeing to it.

I voted for the resolution offered in the joint assembly on December 18 by Senator Gunn, and in favor or against every motion as the case might be in order to carry out the idea of electing the third Senator; I did so because it gave Mr. Dubois the full term, and I wanted him to have it. In the joint assembly, on December 18 the question of the legality of proceeding with the election of the third Senator at that time was discussed, particularly by Judge Gray on the one side and Mr. Lytleton Price on the other, and telegrams were read from honorable Senators in Washington, which caused me to think that it was proper and legal to elect the third Senator at that time, and in voting as I did I considered that I had the best of authority, not being a lawyer, for the action taken by me. After the election on December 18 the question as to the legality of Mr. Dubois's election was very largely discussed, and a good many points were brought out in this discussion which I had not had my attention called to before, and which had the effect of causing me to have grave doubts as to his election, although on the whole I was still of the opinion that he was legally elected. Nevertheless, I would not, because of these ideas, have taken any steps whatever to reverse my action on December 18 had it not been that within 24 hours after the adjournment of the joint assembly on that day the various methods which had been pursued by Mr. Dubois and his particular friends in the legislature to secure a majority began to come to light; his lieutenants began to drop first one thing and then another, until I saw that his election was to say the least very largely a matter of jobbery, brought about by trading votes on various local propositions, including divisions of counties, which were expected to come before the legislature when it got down to its legislative work.

As the session progressed these facts became more and more manifest to my mind, until I became entirely satisfied that Mr. Dubois was the head and center of a ring which sought to dominate the State of Idaho, control all of its Federal appointments in its interest, and even control all the boards and offices in the State government itself. Believing as I did when I made this discovery that the continuation of such a condition of things would be disastrous to the interests of the State, and particularly after Mr. Connell had drawn the term ending March 4, 1891, and I saw the great dissatisfaction that there was in the State over the failure to give north Idaho a representative as required by its platform, I embraced the first opportunity that was offered to rectify as far as was possible the mistake which had been made, and therefore supported Mr. Clagett in his proposition of holding another election, believing that the Senate of the United States was better competent than I to pass upon the question of the legality of Mr. Dubois's election. If I had known on De-

ember 18 when I voted for Mr. Dubois that his election was contrary to law, I would not have supported him in his course, and if I had known at the time of the second election that Mr. Dubois was legally elected, I would not have taken any action to reverse it.

And further I say not.

EDWIN C. SMITH.

Sworn to before me and subscribed in my presence by the said Edwin C. Smith on this 18th day of February, 1891.

[SEAL.]

JONAS W. BROWN,
Notary Public.

STATE OF IDAHO, *County of Ada*, ss:

I, Joseph Hawkins, being first duly sworn, do say under oath, that I am 57 years of age, a Republican in politics, and a member of the present session of the legislature of Idaho, a representative from Owyhee County, in the southern portion of the State. That when I came to the legislature in December last, I was absolutely unpledged so far as men were concerned, but was pledged so far as the platform of the Republican party was concerned; that my first preference was for Governor Shoup for one of the Senators from the southern portion of the State, and as between Messrs. McConnell and Clagett my choice was Mr. Clagett as a Senator from the northern portion of the State, although my relations towards Mr. McConnell were very friendly.

That when the Republican State Convention met, as I am informed, two out of the three delegates from Owyhee County voted for the resolution pledging equal representation in the Senate to the northern and southern ends of the State, while the third delegate, Captain De Lamar, now a State senator from that county, was excused from voting because he was then nominated for the position of State senator; that from the time this plank was placed in the Republican platform to the close of the canvass, the Republicans of the State recognized it as being a party obligation, and it was the expectation of the great mass of the voting Republicans that it would be carried out in good faith not only as a matter of justice, but also as an act of expediency.

When I came to Boise to attend the legislature, I intended to support Governor Shoup as one of the Senators. During the canvass and down to a time after the legislature met, the Republicans of Idaho never expected that there were to be more than two Senators elected. This was not only my expectation, but it was also one of those public facts which nobody would deny. Although a friend of Governor Shoup, I found on coming to Boise that he and Mr. Dubois were so completely wedded to each other politically in the matter of the Senatorial election that it was impossible to tell where one ended and the other began. Being desirous to vote for Governor Shoup I used every exertion in my power by argument and persuasion with his friends that they should stand by the platform, and in several interviews with Governor Shoup himself I urged it upon him in the strongest possible way. The only satisfaction that I could get from him was that he was going to get there if he could, and use all honorable means to do so. Finding that it was impossible to break up this combination, I then made up my mind that to save the credit of the Republican party it was necessary to beat both Mr. Dubois and Governor Shoup, as neither of them would respect the pledge made by the party to the people.

When the vote was taken in the two houses acting separately, I cast my vote for Mr. McConnell as a mere compliment and at his special request, and to show my feeling for north Idaho in connection with the Republican platform. On the day of the first session of the joint assembly, two ballots were taken, and I voted both times for Governor Shoup; I did so in order to show him that he had more strength than I think he thought he had, and because thereby I hoped still to induce him to stand by his platform.

When the combination was formed on the night of December 17, 1890, between Messrs. Shoup, Dubois, and McConnell, and I saw that all three of those men had gone into the arrangement to bring reproach upon the Republican party in order to promote their own personal ends and ambitions, I refused to support or vote for either one of them, and in the joint assembly of December 18 I cast the entire three ballots there taken for Mr. Clagett, and voted for every proposition or against every proposition that came up, as the case may be, in order to break up the combination if possible and secure Mr. Clagett's election. I do further say that Judge Gray, in opposing the adoption of the resolution offered by Senator Gunn to elect the third Senator in advance of the time fixed by law, and for the reasons stated by him at the time, he voiced my sentiment, and his protest against proceeding to the election of the third Senator was made by himself alone but he acted as the representative informally of the entire minority, the haste, hurry, and confusion of the time prevent-

ing such minority from meeting together and organizing a regular opposition to the programme of the combine.

That while the Gunn resolution was under discussion, a dispatch was read to the joint assembly by speaker Fenn purporting to come from Congressman Sweet, and stating that it was the opinion of several eminent Senators in Washington that the legislature could proceed to elect the third Senator. The dispatch as read I understood was necessarily limited, although not so expressed, to the idea that the third Senator could be elected at this session of the legislature, and at the same time that the others were provided the election was conducted at the time and in the manner provided by law; but the effect of this telegram, as was manifest from their action in the joint assembly, upon the members supporting the combine was to persuade them that they could immediately proceed to elect the third Senator after electing the other two, without waiting for the coming around of the second Tuesday after the organization of the legislature, and that it was not material that the act of Congress relating to the election of such third Senator should be complied with. I know this was the case from declarations and expressions made to me; and Mr. K. O. Skatteboe, a representative from Latah County, and who voted for the combination, when the dispatch was read, stated to me as he sat by my side in the joint assembly, that that settled the question, that they could then proceed to elect the third Senator at that time.

On the same day that the second concurrent resolution passed the house on February 8, 1891, I had a conversation with said Skatteboe in which we were discussing the propriety of voting for Mr. Clagett, he being a north Idaho representative. He had stated to me theretofore that he intended to support Mr. Clagett, and in this conversation he declined to do so, stating to me that he was the last man who signed the Dubois paper in December, 1890, which formed the combination; that he did not read the paper but it was read to him by Mr. Lyttleton Price, and that within the last few days (referring to the date of the conversation) he had learned that there was a clause in that paper which he said was not read to him by Mr. Price when he signed it, to the effect that in case Mr. Dubois's election should be held invalid, the party signing the paper would repeat his vote at another time to return him to the Senate.

After the election in December the feeling throughout the State was intense on the part of Republicans that a majority of the Republican members of the legislature, led on by their trusted leaders, had deliberately gone back upon the platform of the party. To my personal knowledge I know and have heard of large numbers of Republicans who declared that they would never vote another Republican ticket for the reason that the party promises under the present leadership of the State were utterly worthless; and especially did I so hear them declare in my own county of Owyhee. That the effect of this deliberate repudiation of the platform by the party operated as its dissolution, for every one instinctively felt that if the most solemn promise contained in the platform could be violated with impunity, and any Republican leader could still be elected to the highest office in the gift of the people while repudiating the platform, that there was no longer any obligation on the part of Republicans to respect any platform that might be gotten up. That this election had the effect of weakening the feeling of party allegiance on the part of Republicans, and was driving many of them out of the party in disgust, when Mr. Clagett (Mr. McConnell in the meantime having drawn the short term ending March 4, 1891) proposed that a second election should be held for the purpose of furnishing a rallying point around which could gather the rank and file of the party who had lost faith in its future in this State. Believing as I did at all times that the so-called election of Mr. Dubois was a nullity, I embraced the opportunity thus offered to rectify as far as possible the wrong which had been done to the party, and supported the second electoral proceedings from the beginning to the end.

I do further say that from the multitude of facts and circumstances known to my personal knowledge or which have been certified to me by persons having personal knowledge of them, I am entirely satisfied not only that Mr. Dubois was not legally elected but also that he owes his election directly to an intentional violation on his part, and that of his supporters, of the requirements of the act of Congress as to the method and time for electing a Senator to fill a vacancy to happen in the future; and that in case Mr. Dubois had waited until the time fixed by law for electing the third Senator, the combination, without which he could not under any circumstances have been elected, would have been dissolved; and I thoroughly believe that the reason why the election of the third Senator was forced on immediately after the election of the other two was because Mr. Dubois knew that if he was not elected then, and in that way, he could not have been elected at all. That many fair-minded members entered that combination, and that in all human probability if the minority could have carried an adjournment prior to the election of the third Senator, so that the legal questions involved could have been discussed under other circumstances than the heat and hurry

which attended the sitting of the joint assembly, I have not a shadow of a doubt in my own mind but that the combination would have dissolved within 6 hours from the time of the adjournment.

And further I say not.

JOSEPH HAWKINS.

Sworn to before me and subscribed in my presence by the said Joseph Hawkins, on this 18th day of February, A. D. 1891.

[SEAL.]

JONAS W. BROWN,
Notary Public.

STATE OF IDAHO, *County of Ada, ss:*

Steven Dempsey, Green White, Edward S. Jewell, Frank Stennenberg, J. M. Balentine, B. H. Smith, John Q. Dryden, and Isaac Irwin, being first duly sworn, say under oath each for himself and not one for the other, that they are all members of the Democratic party and members of the present session of the Idaho legislature; that we all, with the exception of Mr. B. H. Smith, who had left town at the time the same was signed, signed the protest of members forwarded to Washington against the legality of Mr. Dubois's election; that this protest was signed because we were persuaded that his so-called election was wholly void. The facts and circumstances attending that election were such as reflected no credit upon the State. When the concurrent resolution passed the two houses that we would on Tuesday, December 16, 1890, proceed to elect United States Senators as provided by law, there was no law for holding an election at that time except to elect two Senators to fill existing vacancies as required by the constitution of the State, and it was universally understood by all the members of the legislature that that election was limited to the election of the two Senators to fill such vacancies.

It was with that understanding that we voted in favor of the concurrent resolution, as we were required to hold said election within 10 days from the organization of the legislature; that the legislature was organized on the 9th day of December, 1890, and that the second Tuesday after its organization fell on the 23d day of December, 1890; that after taking the separate ballot in the two houses on December 16 without a choice being had, the joint assembly convened on December 17 pursuant to the concurrent resolution, and the universal understanding among the members of the legislature as shown by their expressions on all occasions was that the joint assembly met to elect these two senators only. The balloting on the first day in the joint assembly resulted in no choice. On the next day, December 18, when the joint assembly met, Senator Gunn offered the resolution in the joint assembly to proceed to fill the vacancy occurring March 4, 1891, immediately after the other two Senators should be elected; that late on the night of December 17 we became advised of the fact that Messrs. Shoup, McConnell, and Dubois had formed a combination to elect themselves the next day, but we did not learn until a few moments before the meeting of the joint assembly on December 18 what the programme was nor how it was expected to be carried out. That the whole proceedings in the joint assembly indicated a cut and dried programme, and the rights of the minority were overruled in spite of the fact that Senator Gray, acting as the spokesman and representative of the minority of 25 members, argued and protested against the election of the third Senator, for the reason that such Senator could not legally be elected until the second Tuesday after the organization of the legislature.

That these affiants are informed and believe that the reason why no concurrent resolution was offered in either house to elect the third Senator at the same time that the others were elected was because such resolution could not have passed the Senate, and that the action taken in the joint assembly to violate the law as to the method of electing the third Senator, and the time for such election, was necessitated by the terms of the combination which in all human probability would have been dissolved if the election of the third Senator had been postponed until the time provided by law for such election. And these affiants aver and charge on knowledge, information, or belief that the election of Mr. Dubois was due entirely to the violation of law by him and others in bringing on the election of the third Senator by action taken in the first instance in the joint assembly instead of in the two houses acting separately, and in advance of the time fixed by law; that he owes his election to such violation of law, and that without it he could not have been elected; that this statement of opinion and belief is based upon a multitude of circumstances, some of which are known to one, and others to others of these affiants, which all tend to the conclusion stated above, and which call for in detail a thorough investigation on the part of the Senate of the United States.

And these affiants further say that during the session of the joint assembly on December 18, that Senator Gray, acting on behalf of the minority in such assembly,

in addition to objecting to the election of the third Senator for the reason that it was in advance of the time fixed by law, also objected that such an election at that time was in violation of the resolution of the separate houses calling the joint assembly together, and that such election at that time would be illegal for the further reason that no action had been taken thereon by the two houses acting separately, as required by the Revised Statutes of the United States; that on December 19, 1890, J. M. Ballentine, one of these affiants, offered an amendment to the journal of the house when the same was read upon that day, setting forth the reasons as stated by Judge Gray as the ground for his protest and that of the minority, and asked that the journal be amended accordingly; that such request or motion was denied by the house, which refused to place upon its journal such statement of fact as was strictly according to truth, and that the amendment thus rejected, but recorded in the journal as rejected, states the truth relating to the objections made to the election of a third Senator on December 18 by Senator Gray.

We do further say that during the debate that sprung up on the introduction of the resolution offered by Senator Gunn in the joint assembly for the purpose of carrying the resolution to its passage and showing that it was proper to elect the third Senator in advance of the time fixed by law and without taking a separate vote in the two houses, a dispatch, purporting to be from Congressman Sweet, was read by Speaker Fenn, in which it was stated that Senators Edmunds, Manderson, and others had stated that there would be a vacancy to be filled by this legislature after March 4, 1891, and that it was competent for the legislature to elect a third Senator to fill such vacancy; that this dispatch was evidently assumed by the supporters of Messrs. Shoup, McConnell, and Dubois as authorizing the legislature to proceed to elect the third Senator in the manner that was pursued, and that the requirements of the Revised Statutes of the United States as to the method and time of electing him were immaterial. And these affiants are wholly satisfied from what they saw in said joint assembly that this dispatch had the effect of overriding any scruples the members of the legislature supporting Mr. Dubois might otherwise have had to electing the third Senator at that time.

And these affiants further say that however it may have been among the Republican members of the legislature on the night of December 17, that the Democratic members who had no Democratic candidate with a headquarters were, until the joint assembly met, ignorant of the terms of the combination between Messrs. Shoup, McConnell, and Dubois, and only knew in a general way at that time that some combination had been formed between them, and that even this intelligence was conveyed to us only a few moments before the joint assembly convened. That the springing of the resolution offered by Senator Gunn was a complete surprise to us and that we were not prepared at that time to make any organized opposition to the adoption of the resolution or to consider, as ought to have been considered, the question of its legality; that had a concurrent resolution been offered in the two houses acting separately ample opportunity would have been allowed to examine the authorities and show the illegality of such action; and that by the course that was taken by the supporters of Messrs. Dubois, Shoup, and McConnell these affiants were deprived of one of the most valuable aids in the proper selection of a United States Senator; that if opportunity had been given quite a number of those who were embraced in the combination would themselves have receded from the proposition of electing the third Senator at the same time as the other two.

E. S. JEWELL.

ISAAC IRWIN.

JAMES M. BALLENTINE.

JOHN Q. DRYDEN.

GREENE WHITE.

B. H. SMITH.

STEPHEN DEMPSEY.

FRANK STENNENBERG.

Subscribed and sworn to before me this 16th day of February, A. D. 1891.

[SEAL.]

JONAS W. BROWN,
Notary Public.

EXTRACTS FROM THE JOURNAL OF THE SENATE OF THE FIRST
SESSION OF THE LEGISLATURE OF THE STATE OF IDAHO OF
TRANSACTIONS HAD SINCE FEBRUARY 5, 1891, RELATING TO
THE ELECTION OF A UNITED STATES SENATOR TO SUCCEED
HON. WILLIAM J. M'CONNELL.

FORTY-SIXTH DAY.

SENATE CHAMBER,
Boisé City, Idaho, February 6, 1891.

* * * * *

INTRODUCTION OF RESOLUTIONS.

Mr. De Lamar introduced senate concurrent resolution No. 12, which was read.

Mr. De Lamar moved that the resolution be adopted.

Mr. Shoup moved to amend the resolution by inserting after "Dubois," in the last line, first page, "and Wm. H. Clagett."

Which motion was lost.

The question being on the adoption of the resolution, it was decided as follows:

The yeas and nays were called for.

ROLL CALL.

Those voting in the affirmative were Messrs. De Lamar, Dempsey, Finch, Jewell, Langrishe, Smith, White, Wing, and Mr. President—9.

Those voting in the negative were Messrs. Brigham, Gunn, McPherson, Rogers, Shoup, Underwood, Weiler, and Wells—8.

Absent—Mr. Branstetter—1.

So the resolution was adopted.

Mr. White moved that the vote by which the resolution was adopted be reconsidered, and that the motion to reconsider be laid on the table.

Which motion prevailed.

* * * * *

By order of the president, senate concurrent resolution No. 12 is spread in full upon the journal as follows:

Whereas the present session of the legislature was organized on Tuesday, December 9, 1890; and

Whereas, the State constitution and the admission act required that two United States Senators should be elected within 10 days after the organization of the legislature; and

Whereas, on Tuesday, the 16th day of December, 1890, the legislature, pursuant to the requirement of the constitution and admission act, voted for a United States Senator in the two houses acting separately, and thereafter, as provided by law, met on December 17 in joint assembly and voted for a United States Senator, and thereafter on December 18, 1890, again met in joint assembly, and within 10 days after its organization elected, in the manner provided by law, the Hons. Geo. L. Shoup and Wm. J. McConnell United States Senators; and

Whereas the legislature thereupon immediately proceeded to vote for Hon. Fred. T. Dubois for the term beginning March 4, 1891, in advance of the drawing for terms by the two Senators-elect, in advance of the time fixed by law, without first voting in the two houses, acting separately, and against the protest of members of the joint assembly; and

Whereas, upon full consideration of the facts, it is the opinion of the legislature that if the alleged election of said Hon. Fred T. Dubois is not void there is at least grave doubt as to its validity; Therefore

Resolved by the senate (the house of representatives concurring), That at the hour of 12 o'clock meridian of the first legislative day after the passage of this resolution the legislature will proceed to elect a United States Senator to succeed Hon. Wm. J. McConnell, for the term beginning March 4, 1891, and that such election shall be conducted in all respects in the manner provided in section 15 of the Revised Statutes of the United States.

* * * * *

FORTY-NINTH DAY.

BOISÉ CITY, IDAHO, *February 9, 1891.*

* * * * *

MESSAGE FROM THE HOUSE.

OFFICE OF THE CHIEF CLERK OF THE HOUSE OF REPRESENTATIVES,
Boisé City, Idaho, February 9, 1891.

Mr. President: I am instructed to inform your honorable body that the house of representatives has had under consideration and passed senate concurrent resolution No. 12, relative to election of United States Senator to fill vacancy occurring March 4, 1891, which is herewith transmitted.

Respectfully,

CHAS. H. REED,
Chief Clerk.

FIFTIETH DAY.

BOISÉ CITY, IDAHO, *February 10, 1891.*

* * * * *

The hour of 12 o'clock meridian having arrived, the president announced that under the provisions of senate concurrent resolution No. 12, the senate would proceed to vote for a United States Senator; the resolution was read, and the roll was called with the following result:

Those voting for William C. Clagett were Messrs. De Lamar, Dempsey, Finch, Jewell, Langrishe, Smith, White, Wing, and Mr. President—9.

Those voting for W. J. McConnell were Messrs. Brigham and Wells.

Mr. Branstetter voted for Joseph Kinney.

Mr. Gunn voted for J. L. Underwood.

Mr. McPherson voted for G. B. Rogers.

Mr. Rogers voted for M. M. McPherson.

Mr. Shoup voted for N. J. Sharp.

Mr. Underwood voted for James Gunn.

Mr. Weiler voted for D. P. B. Pride.

Total, 18.

No person having received a majority of all the votes cast, there was no election.

FIFTY-FIRST DAY.

BOISÉ CITY, IDAHO, *February 11, 1891.*

* * * * *

At 10:20 o'clock a. m. the president announced that he was about to sign senate concurrent resolution No. 12.

* * * * *

At 12 o'clock meridian the senate repaired to the hall of the house of representatives to meet the house in joint session.

* * * * *

IN JOINT ASSEMBLY.

The hour of 12 o'clock m. having arrived, the sergeant-at-arms announced, "The honorable senate of the State of Idaho in waiting," and by direction of the speaker the senate was admitted, the joint convention was called to order by the speaker of the house, the president of the convention. The rolls of the respective houses were then called. Absent, Messrs. McPherson, Rogers, Shoup, and Weiler, of the senate, and Mr. Hixon, of the house.

Senate concurrent resolution No. 12 was read.

The journals of the two houses so far as they relate to the election of United States Senator were read and the president announced as follows:

It appearing by the journals of the senate and house of representatives that the same person has not received a majority of votes in each house acting separately,

the joint assembly will proceed to choose for United States Senator the secretary will call the roll, beginning with the roll of the senate.

Mr. Price presented the following protest:

We the undersigned members of the house of representatives of the legislature of the State of Idaho protest against the proceedings for the election of a United States Senator from Idaho for the term to commence March 4, 1891, on the ground that said proceedings are illegal, null, and void, for the reason that the present legislature has already elected a Senator in Congress for said term.

D. R. Munroe, P. Fredrickson, F. B. Ethel, F. M. Merrill, Lytleton Price, F. A. Fenn, F. C. Ramsey, R. H. Caldwell, R. O. Skatteboe, Thomas Pyeatt, G. E. Mills, A. J. Green, J. C. Goodnight, James Lyon, E. S. Suydam.

The roll being then called, 32 votes were cast, of which William H. Clagett received 28; Alexander E. Mayhew received 2, R. H. Barton received 1, and John A. Finch received 1. Present and not voting, 17; those absent and not voting, 5. Those voting for Mr. Clagett were Messrs. De Lamar, Dempsey, Finch, Jewell, Langrisch, Smith, White, Wing, and Mr. President of the senate, and Messrs. Armstrong, Ballentine, Briggs, Cameron, Casey, Dryden, Emery, Hanley, Hawkins, Irwin, King, Martin, Porter, Scofield, Smith, W. H.; Smith, B. H.; Sperry, Stennenberg, and Swager of the house. Those voting for Alexander E. Mayhew were Messrs. Branstetter, of the senate, and Jones, of the house, Mr. Brigham, of the senate, voted for John A. Finch. Mr. Wells, of the senate, voted for R. H. Barton.

Those present and not voting were Messrs. Gunn and Underwood, of the senate, and Messrs. Caldwell, Ethel, Fredrickson, Goodnight, Green, Lyon, Merrill, Mills, Munroe, Price, Payeatt, Ramsey, Skatteboe, Suydam, and Mr. Speaker, of the house.

Those absent were Messrs. McPherson, Rogers, Shoup, and Weiler, of the senate, and Hixon, of the house.

Whereupon the president announced that William H. Clagett, having received a majority of all the votes cast, is declared duly elected.

On motion of Mr. Emery, the joint assembly dissolved.

F. A. FENN,
President of the Joint Convention.

CHARLES H. REED,
Secretary of the Joint Convention.

FIFTY-FOURTH DAY.

BOISÉ CITY, IDAHO, *February 14, 1891.*

At 2:10 o'clock p. m., Mr. President announced the result of the vote for United States Senator in joint convention on the 11th day of February, 1891, and handed the secretary the certificate of the presiding officer of the two houses, which was read as follows:

This certifies that in pursuance of senate concurrent resolution No. 12, relating to the election of United States Senator, passed by the senate February 7, 1891, and by the house of representatives, February 9, 1891, the senate and house of representatives met in joint assembly at 12 o'clock m., February 11, 1891, and that part of the journals of the senate and house of representatives relating to the election of United States Senator being read, and showing that the same person had not received a majority of the votes cast in each house acting separately, thereupon the joint assembly proceeded to choose for United States Senator, the vote being taken as provided by law, and it appearing that William H. Clagett had received a majority of all the votes cast, a majority of the members of both houses being present and voting, he, the said William H. Clagett, was thereupon declared duly elected.

Boisé City, Idaho, February 13, 1891.

JOHN S. GRAY,
President of the Senate.

F. A. FENN,
Speaker of the House of Representatives.

STATE OF IDAHO, *County of Ada, ss:*

I. M. C. Athey, secretary of the senate of the first session of the legislature of the State of Idaho, do hereby certify that the foregoing is a true and correct copy of the whole of all those portions of the journal of the said senate relating to the election of a United States Senator (since the 5th day of February, 1891) to succeed Hon. Wm. J. McConnell.

M. C. ATHEY.

EXTRACTS FROM JOURNAL OF THE HOUSE OF REPRESENTATIVES OF THE LEGISLATURE OF THE STATE OF IDAHO, FIRST SESSION.

SATURDAY, *February 7, 1891.*

The house having under consideration messages from the senate,

Senate concurrent resolution No. 12 was read.

Mr. Price moved that the resolution be indefinitely postponed.

Mr. Emery moved that the motion to indefinitely postpone be laid on the table; upon which the ayes and nays were taken with the following result:

Ayes: Messrs. Armstrong, Ballentine, Briggs, Cameron, Casey, Dryden, Emery, Hanley, Hawkins, Irwin, King, Martin, Porter, Scofield, Smith, W. H., Smith, B. H., Sperry, Strunenberg, and Swauger—19.

Nays: Messrs. Caldwell, Ethel, Frederickson, Goodnight, Green, Hixon, Jones, Lyon, Merrell, Mills, Munro, Price, Pyeatt, Ramsey, Skatteboe, Suydam, and Mr. Speaker—17.

So the motion to lay on the table was agreed to.

Mr. Price offered the following amendment: Strike out from first preamble the words "Tuesday, December 9, 1890," and insert in lieu thereof the words "Monday, December 8, 1890"; on which Mr. Emery moved the previous question, and demanded the yeas and nays thereon, which were ordered.

The question being, Shall the main question now be put? the ayes and nays were taken, with the following result:

Ayes: Messrs. Armstrong, Ballentine, Briggs, Cameron, Casey, Dryden, Emery, Hanley, Hawkins, Irwin, Jones, King, Martin, Porter, Scofield, Smith, W. H., Smith, B. H., Sperry, Strunenberg, and Swauger—20.

Nays: Caldwell, Ethel, Frederickson, Goodnight, Green, Hixon, Lyon, Merrell, Mills, Monroe, Price, Pyeatt, Ramsey, Skatteboe, Suydam, and Mr. Speaker—16.

So the previous question was ordered.

The question recurring on the adoption of the amendment, the ayes and nays were called and taken, with the following result:

Ayes: Messrs. Caldwell, Ethel, Frederickson, Goodnight, Green, Hixon, Lyon, Merrell, Mills, Munro, Price, Pyeatt, Ramsey, Skatteboe, Suydam, and Mr. Speaker—16.

Nays: Messrs. Armstrong, Ballentine, Briggs, Cameron, Casey, Dryden, Emery, Hanley, Hawkins, Irwin, Jones, King, Martin, Porter, Scofield, Smith, W. H., Smith, B. H., Sperry, Strunenberg, and Swauger—20.

So the amendment was disagreed to.

Mr. Price then offered the following amendment:

Strike out from the fourth preamble the words "vote for," and insert in lieu thereof the words "elect and thereupon elected;" also, strike out from same preamble the words "in advance of the time fixed by law."

Mr. Emery moved the previous question and demanded the ayes and nays thereon, which were ordered. The question being, Shall the main question now be put? the ayes and nays were taken with the following result:

Ayes: Messrs. Armstrong, Ballentine, Briggs, Cameron, Casey, Dryden, Emery, Hanley, Hawkins, Irwin, King, Martin, Porter, Scofield, Smith, W. H., Smith, B. H., Sperry, Strunenberg, and Swauger—19.

Nays: Messrs. Caldwell, Ethel, Frederickson, Goodnight, Green, Hixon, Jones, Lyon, Merrell, Mills, Munro, Price, Pyeatt, Ramsey, Skatteboe, Suydam, and Mr. Speaker—17.

So the previous question was ordered.

The question recurring on the adoption of the amendment, the ayes and nays were taken with following result:

Ayes: Messrs. Caldwell, Ethel, Frederickson, Goodnight, Green, Hixon, Lyon, Merrell, Mills, Munro, Price, Pyeatt, Ramsey, Skatteboe, Suydam, and Mr. Speaker—16.

Nays: Messrs. Armstrong, Ballentine, Briggs, Cameron, Casey, Dryden, Emery, Hanley, Hawkins, Irwin, Jones, King, Martin, Porter, Scofield, Smith, W. H., Smith, B. H., Sperry, Strunenberg, and Swauger—20.

So the amendment was disagreed to.

Mr. Munro moved that the resolution be referred to the committee on privileges and elections.

Mr. Emery moved the motion to refer be laid on the table; upon which the ayes and nays were demanded and taken with the following result:

Ayes: Messrs. Armstrong, Ballentine, Briggs, Cameron, Casey, Dryden, Emery, Hanley, Hawkins, Irwin, King, Martin, Porter, Price, Scofield, Smith, W. H., Smith, B. H., Sperry, Stenneberg, and Swauger—20.

Nays: Messrs. Caldwell, Ethel, Frederickson, Goodnight, Green, Hixon, Jones, Lyon, Merrill, Mills, Munro, Pyeatt, Ramsey, Skatteboe, Suydam, and Mr. Speaker—16.

So the motion to refer was laid on the table.

Mr. Price gave notice that on Monday, February 9, 1891, he would move a reconsideration of the last vote.

Mr. Emery offered to move an immediate reconsideration, which the chair declared out of order, and from which decision Mr. Emery appealed. The question being, shall the decision of the chair stand as the decision of the House. The ayes and nays were called and taken with the following result:

Ayes: Messrs. Caldwell, Ethel, Frederickson, Goodnight, Green, Hixon, Jones, Lyon, Martin, Merrill, Mills, Munro, Price, Pyeatt, Ramsey, Skatteboe, Stenneberg, and Suydam—18.

Nays: Armstrong, Ballentine, Briggs, Cameron, Casey, Dryden, Emery, Hanley, Hawkins, Irwin, King, Porter, Scofield, Smith W. H., Smith B. H., Sperry, and Swauger—17.

So the decision of the chair was sustained.

MONDAY, *February 9, 1891.*

Mr. Price called up his motion to reconsider the vote, by which the motion of Mr. Munro, made on Saturday, February 7, 1891, to refer senate concurrent resolution No. 12 to the committee on privileges and elections was laid on the table, and withdraw said motion to reconsider.

UNFINISHED BUSINESS.

The house having under consideration senate concurrent resolution No. 12, Mr. Price offered the following amendment: Strike out from fifth preamble the word "grave" and insert in lieu thereof the word "no."

Mr. Emery moved the previous question, to embrace all authorized motions or amendments and include the resolution to its passage or rejection. The question being, shall the main question be now put; the ayes and nays were taken with the following result:

Ayes: Messrs. Armstrong, Ballentine, Briggs, Cameron, Casey, Dryden, Emery, Hanley, Hawkins, Irwin, King, Martin, Porter, Scofield, W. H. Smith, B. H. Smith, Sperry, Stennenberg, and Swauger—19.

Nays: Messrs. Caldwell, Ethel, Frederickson, Goodnight, Green, Hixon, Jones, Lyon, Merrill, Mills, Munro, Price, Pyeatt, Ramsey, Skatteboe, Suydam, and Mr. Speaker—17.

So the previous question was ordered.

The question recurring on the adoption of the amendment proposed by Mr. Price, the ayes and nays were taken with the following result:

Ayes: Messrs. Caldwell, Ethel, Frederickson, Goodnight, Green, Hixon, Lyon, Merrill, Mills, Munro, Pyeatt, Ramsey, Skatteboe, Suydam, and Mr. Speaker—15.

Nays: Armstrong, Ballentine, Briggs, Cameron, Casey, Dryden, Emery, Hanley, Hawkins, Irwin, Jones, King, Martin, Porter, Price, Scofield, Smith, W. H., Smith, B. H., Sperry, Stennenberg, and Swauger—21.

So the amendment was disagreed to.

Mr. Price gave notice of reconsideration of the vote last taken, which the speaker ruled as dilatory and therefore out of order.

Then the question recurring to the adoption of senate concurrent resolution No. 12, the ayes and nays were taken with the following result:

Ayes: Messrs. Armstrong, Ballentine, Briggs, Cameron, Casey, Dryden, Emery, Hanley, Hawkins, Irwin, King, Martin, Porter, Scofield, Smith W. H., Smith B. H., Sperry, Stennenberg, and Swauger—19.

Nays: Messrs. Caldwell, Ethel, Frederickson, Goodnight, Green, Hixon, Jones, Lyon, Merrill, Mills, Munro, Price, Pyeatt, Ramsey, Skatteboe, Suydam, and Mr. Speaker—17.

So the resolution was adopted.

Mr. Emery moved that the vote by which senate concurrent resolution No. 12 was adopted, be reconsidered, and also moved that the motion to reconsider be laid on the table, upon which the ayes and nays were taken with the following result:

Ayes: Messrs. Armstrong, Ballentine, Briggs, Cameron, Casey, Dryden, Emery, Hanley, Hawkins, Hixon, Irwin, King, Martin, Munro, Porter, Price, Scofield, Smith, W. H., Smith, B. H., Sperry, Stennenberg, and Swauger—22.

Nays: Messrs. Caldwell, Ethel, Frederickson, Goodnight, Green, Jones, Lyon, Merrill, Mills, Pyeatt, Ramsey, Skatteboe, Suydam, and Mr. Speaker—14.

So the motion to reconsider was laid on the table.

TUESDAY, *February 10, 1891.*

MOTIONS AND RESOLUTIONS.

Mr. Price offered the following resolution :

Resolved, That inasmuch as the present legislature of Idaho has already duly elected a United States Senator for the full term commencing March 4, 1891, in the person of Hon. Fred. T. Dubois, and notwithstanding the fact that certain members who assisted in his election have, under pretense that said election is of doubtful validity, and for reasons best known to themselves, allied themselves with his enemies and the Democratic party to deprive him of his seat in the Senate, we have no reason to be dissatisfied with his election or to doubt its validity, we therefore decline to participate in any further election for Senator for said term.

Mr. Ballentine moved a call of the house, which was disagreed to.

The question being upon the adoption of the resolution, the ayes and nays were demanded and taken with the following result :

Ayes: Messrs. Caldwell, Ethel, Frederickson, Goodnight, Green, Hixon, Lyon, Mills, Munro, Price, Pyeatt, Ramsey, Skatteboe, Sundam, and Mr. Speaker—15.

Nays: Armstrong, Ballentine, Briggs, Cameron, Casey, Dryden, Emery, Hanley, Hawkins, Irwin, Jones, King, Martin, Porter, Scofield, Smith, W. H., Smith, B. H., Sperry, Stenenberg, and Swanger—20.

So the resolution failed to pass.

The hour of 12 o'clock having arrived the reading of the bill was suspended, and then, in conformity with Senate concurrent resolution No. 12, the house proceeded to name one person for Senator in Congress from the State of Idaho to succeed the Hon. W. J. McConnell, whose term expires on and after the 4th day of March, A. D. 1891.

Mr. Price offered the following protest:

MR. SPEAKER. I protest against any proceeding in this house for the election of the Senator of the United States for the State of Idaho.

LYTTLETON PRICE.

The roll being called 20 votes were cast, of which W. H. Clagett received 19; Geo. W. Brazee received 1; absent, 1; present and not voting, 15.

Those voting for William H. Clagett were: Armstrong, Ballentine, Briggs, Cameron, Casey, Dryden, Emery, Hanley, Hawkins, Irwin, King, Martin, Porter, Scofield, W. H. Smith, B. H. Smith, Sperry, Stenbergne, and Swanger—19.

Those voting for Mr. Brazee were Mr. Jones—1.

Those present and declining to vote were: Messrs. Caldwell, Ethel, Frederickson, Goodnight, Green, Hixon, Merrill, Mills, Munro, Price, Pyeatt, Ramsey, Skatteboe, Snyder, and Mr. Speaker—15.

Absent, Mr. Lyon.

Whereupon the speaker declared that William H. Clagett, having received a majority of all the votes cast, is the choice of the house of representatives for United States Senator.

WEDNESDAY, *February 11, 1891.*

The hour of 12 o'clock m. having arrived, the sergeant-at-arms announced the honorable senate of the State of Idaho in waiting, and by direction of the speaker the senate was admitted.

The joint convention was called to order by the speaker of the house, the president of the convention.

The rolls of the respective houses were then called.

Absent: Messrs. McPherson, Rodgers, Shoup, and Weiler of the senate, and Mr. Hixon of the house.

Senate concurrent resolution No. 12 was read.

The journals of the two houses so far as they relate to the election of United States Senator were read, and the president announced as follows :

It appearing by the journals of the senate and house of representatives that the same person has not received a majority of votes in each house acting separately, the joint assembly will proceed to choose for United States Senator. The secretary will call the roll, beginning with the roll of the senate.

Mr. Price presented the following protest :

We, the undersigned, members of the house of representatives of the legislature of the State of Idaho, protest against the proceedings for the election of a United States Senator from Idaho for the term to commence March 4, 1891, on the ground that said proceedings are illegal, null, and void, for the reason that the present legislature has already elected a Senator in Congress for said term.

D. R. Munro, F. C. Ramsey, R. H. Caldwell, K. O. Skatteboe, Thos. Pyeatt, G. E. Mills, A. J. Green, J. L. Goodnight, F. A. Fenn, James Lyon, E. S. Snyder, P. Frederickson, D. B. Ethel, F. M. Merrell, Lyttleton Price.

The roll being called, 32 votes were cast; of which Wm. H. Clagett received 28, Alexander E. Mayhew received 2, R. H. Barton received 1, and John A. Finch received 1. Present and not voting, 17. Absent and not voting, 5.

Those voting for Mr. Clagett were: Messrs. De Lamar, Dempsey, Finch, Jewell, Langrishe, Smith, White, Wing, and Mr. President, of the Senate; and Messrs. Armstrong, Ballentine, Briggs, Cameron, Casey, Dryden, Emery, Hanley, Hawkins, Irvin, King, Martin, Porter, Scofield, Smith, W. H. Smith, B. H. Sperry, Sturmorberg, and Swauger, of the House.

Those voting for Alexander E. Mayhew were: Messrs. Branstitter, of the Senate, and Jones of the House.

Mr. Brigham, of the Senate, voted for John A. Finch.

Mr. Wells, of the Senate, voted for R. H. Barton.

Those present and not voting were Messrs. Gunn and Underwood of the Senate, and Messrs. Caldwell, Ethel, Frederickson, Goodnight, Green, Lyon, Merrell, Mills, Munro, Price, Pyeatt, Ramsey, Skatteboe, Suydam, and Mr. Speaker of the House. Those absent were Messrs. McPherson, Rogers, Shoup, and Weiler, of the Senate, and Hixon, of the House.

Whereupon the President announced that William H. Clagett, having received a majority of all the votes cast by the joint assembly, is declared duly elected.

On motion of Mr. Emery the joint assembly dissolved.

F. A. FENN,
President of Joint Convention.

CHAS. H. REED,
Secretary of the Joint Convention.

SATURDAY, February 14, 1891.

* * * * *

The speaker made the following announcement:

This certifies that in pursuance of senate concurrent resolution No. 12, relating to the election of United States Senator, passed by the senate February 7, 1891, and by the house of representatives February 9, 1891, the senate and house of representatives met in joint assembly at 12 m., February 11, 1891, and that part of the journals of the senate and house of representatives relating to the election of United States Senator being read and showing that the same person had not received a majority of the votes cast in each house acting separately thereupon, the joint assembly proceeded to choose for United States Senator. The vote being taken as provided by law, and it appearing that William H. Clagett had received a majority of all the votes cast, a majority of all the members of both houses being present and voting, he, the said Wm. H. Clagett, was thereupon declared duly elected.

Boisé City, Idaho, February 13, 1891.

JOHN S. GRAY,
President of the Senate.

F. A. FENN,
Speaker of House of Representatives.

I, Charles H. Reed, chief clerk of the house of representatives of the legislature of the State of Idaho, do hereby certify that the foregoing are true and literal copies of portions of the journal of the house of representatives of the legislature of the State of Idaho at its first session.

Dated at Boisé City, Idaho, this 14th day of February, A. D. 1891.

CHAS. H. REED,
Chief Clerk.

IN THE SENATE OF THE UNITED STATES.

FEBRUARY 27, 1891.—Submitted, ordered to lie over, and be printed.

Mr. PLUMB submitted the following

RESOLUTION:

Resolved, That the Committee on Finance be, and they are hereby, authorized and directed, by subcommittee or otherwise, to ascertain in every practicable way, and to report from time to time to the Senate, the effect of the tariff laws upon the imports and exports, the growth, development, production, and prices of agricultural and manufactured articles, at home and abroad; and upon wages, domestic and foreign; also to ascertain the relative cost and rates of transportation in the United States and foreign countries; and for this purpose they are authorized to sit at such times and places as they may deem advisable, by subcommittee or otherwise.

○

THE HISTORY OF THE UNITED STATES

REVOLUTION

The Revolution was a period of great struggle and sacrifice for the American people. It was a time when the colonies fought for their freedom from British rule. The war was fought from 1775 to 1783, and it was a hard-fought battle. The American people were determined to win their freedom, and they did so. The Revolution was a great achievement, and it is a source of pride for all Americans.

IN THE SENATE OF THE UNITED STATES.

FEBRUARY 28, 1891.—Presented, ordered to lie on the table, and be printed.

The VICE PRESIDENT presented the following memorial of the Philadelphia Board of Trade praying the immediate consideration and passage of the Torrey Bankrupt Bill:

MEMORIAL TO THE SENATE

FROM THE

PHILADELPHIA BOARD OF TRADE,

AT ITS FIFTY-EIGHTH ANNUAL MEETING.

PHILADELPHIA, PA., *January 26, 1891.**To the Senate of the United States:*

Your memorialist, the Philadelphia Board of Trade, respectfully petitions you to immediately consider and pass the Torrey bankrupt bill, for reasons as follows:

1. The number of commercial failures for the whole country is increasing from year to year, and the amount of the liabilities of those who fail is for each year largely in excess of the preceding year. For your information facts are submitted as follows:

Table of commercial failures.

[As reported by Messrs. R. G. Dun & Co., for the years 1888 to 1890, inclusive.]

Years.	No. of failures.	Liabilities.	Excess of liabilities over preceding year.
1888	10, 679	\$123, 829, 973	.....
1889	10, 882	148, 784, 337	\$24, 954, 364
1890	10, 907	189, 856, 964	41, 072, 627

This showing must give rise to great apprehension as to what the future will bring to the commercial interests of the country.

2. As a result of the failure of Congress for eleven years to enact a bankrupt law, there are to-day hundreds of thousands of honest men who are plodding their weary way as best they can under burdens of indebtedness which they can not and never will be able to pay. The hanging over them of this cloud of indebtedness militates against a sound public policy, interferes with their exercising the rights of citizenship in the highest and best sense, and prevents them from adequately supporting their families and educating their children, all to no advantage to their respective creditors.

3. Four national conventions have been held since the repeal of the old bankrupt law, for the sole purpose of securing the enactment of a new one. The last of them promulgated the Torrey bill, and it has since been indorsed by hundreds of commercial bodies in the several States of the Union and petitioned for by hundreds of thousands of citizens, without regard to their residences, occupations, or political convictions. These facts indicate conclusively that the honest progressive men of this country, those who honestly labor for the perpetuation of a commerce founded upon the rules of integrity, are weary of the present condition of the laws, which beget recklessness and want of care on the part of those engaged in business; the giving and receiving of preferences; the execution and enforcement of secret judgments, and the perpetuation of fraud and chicanery in its multifarious forms. They further bear testimony that these same men desire a uniform law, as contemplated by the Constitution, which will produce more conservative business methods, enable debtors and creditors to confer together for mutual advantage, without the fear of the institution of compulsory processes, and in the event of commercial failures, equitable, prompt and economical distributions of the assets of debtors, and if honest, their complete discharge.

In view of all which, conclusions are reached as follows:

1. *Resolved*, That in the opinion of this board there is but one way to check the increase of commercial failures, diminish the amount of liabilities involved therein, and restore and maintain confidence, and that is for Congress to pass a law embracing both the voluntary and involuntary systems of bankruptcy, to supersede the incomplete and varying laws of the several States.

2. *Resolved further*, That this board believes that honest insolvents should be discharged from their debts, under such carefully guarded provisions of law as would prevent the extension of like privileges to dishonest men.

3. *Resolved further*, That this board respectfully submits that the Torrey bankrupt bill, involving as it does the property rights of every man, woman and child in the whole country and the rights of every honest insolvent man to a discharge, is the most important measure now pending before your body and should therefore be immediately considered, to the exclusion of all other business.

4. *Resolved further*, That the officers of this board are hereby instructed to inform the Senators and Representatives in Congress from this State of the above action, and to earnestly urge them to use their utmost influence to have the Torrey bill passed before the adjournment of Congress on March 4 next.

A true copy from the records.

FRED. FRALEY,
President Philadelphia Board of Trade

Attest:

W. R. TUCKER,
Secretary.

IN THE SENATE OF THE UNITED STATES.

FEBRUARY 28, 1891.—Reported and ordered to be printed.

Mr. MOODY, from the Committee of Conference on the disagreeing votes of the two Houses on the amendments of the Senate to the bill (H. R. 8150), submitted the following

REPORT:

The committee of conference on the disagreeing votes of the two Houses on the amendment of the Senate to the bill H. R. 8150, "An act to provide for the adjudication and payment of claims arising from Indian depredations," having met, after full and free conference have agreed to recommend and do recommend to their respective Houses as follows:

That the House recede from its disagreement to the amendment of the Senate, and agree to the same with an amendment as follows, so that the bill, as amended, will read:

H. R. 8150.

AN ACT TO PROVIDE FOR THE ADJUDICATION AND PAYMENT OF CLAIMS ARISING FROM INDIAN DEPREDACTIONS.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That in addition to the jurisdiction which now is, or may hereafter be, conferred upon the Court of Claims, said court shall have and possess jurisdiction and authority to inquire into and finally adjudicate, in the manner provided in this act, all claims of the following classes, namely:

First. All claims for property of citizens of the United States taken or destroyed by Indians belonging to any tribe or nation in amity with the United States, without just cause or provocation on the part of the owner or agent in charge, and not returned or paid for.

Second. Such jurisdiction shall also extend to all cases which have been examined and allowed by the Interior Department; and also to such cases as were authorized to be examined under the act of Congress making appropriations for the current and contingent expenses of the Indian Department, and for fulfilling treaty stipulations with various Indian tribes for the year ending June 30, 1886, and for other purposes, approved March 3, 1885, and under subsequent acts, subject, however, to the limitations hereinafter provided.

Third. All just offsets and counterclaims to any claim of either of the preceding classes which may be before such court for determination.

SEC. 2. That all questions of limitations as to time and manner of presenting claims are hereby waived, and no claim shall be excluded from the jurisdiction of the court because not heretofore presented to the Secretary of the Interior or other officer or Department of the Gov-

ernment: *Provided*, That no claim accruing prior to July 1, 1865, shall be considered by the court unless the claim has been allowed or has been or is pending prior to the passage of this act before the Secretary of the Interior or the Congress of the United States, or before any superintendent, agent, subagent, or commissioner authorized under any act of Congress to inquire into such claims; but no case shall be considered pending unless evidence has been presented therein: *And provided further*, That all claims existing at the time of the taking effect of this act shall be presented to the court by petition, as hereinafter provided, within three years after the passage hereof, or shall be thereafter forever barred: *And provided further*, That no suit or proceeding shall be allowed under this act for any depredation which shall be committed after the passage thereof.

SEC. 3. That all claims shall be presented to the court by petition setting forth in ordinary and concise language, without unnecessary repetition, the facts upon which such claims are based, the persons, classes of persons, tribe or tribes, or band of Indians by whom the alleged illegal acts were committed, as near as may be, the property lost or destroyed, and the value thereof, and any other facts connected with the transactions and material to the proper adjudication of the case involved. The petition shall be verified by the affidavit of the claimant, his agent, administrator, or attorney, and shall be filed with the clerk of the said court. It shall set forth the full name and residence of the claimant, the damages sought to be recovered, praying the court for a judgment upon the facts and the law.

SEC. 4. The service of the petition shall be made upon the Attorney-General of the United States in such manner as may be provided by the rules or orders of said court. It shall be the duty of the Attorney-General of the United States to appear and defend the interests of the Government and of the Indians in the suit, and within sixty days after the service of the petition upon him, unless the time shall be extended by order of the court made in the case, to file a plea, answer, or demurrer on the part of the Government and the Indians, and to file a notice of any counterclaim, set-off, claim of damages, demand, or defense whatsoever of the Government or of the Indians in the premises: *Provided*, That should the Attorney-General neglect or refuse to file the plea, answer, demurrer, or defense as required the claimant may proceed with the case under such rules as the court may adopt in the premises; but the claimant shall not have judgment for his claim, or for any part thereof, unless he shall establish the same by proof satisfactory to the court: *Provided*, That any Indian or Indians interested in the proceedings may appear and defend, by an attorney employed by said Indian or Indians, with the approval of the Commissioner of Indian Affairs, if he or they shall choose so to do.

In considering the merits of claims presented to the court, any testimony, affidavits, reports of special agents or other officers, and such other papers as are now on file in the Departments or in the courts relating to any such claims shall be considered by the court as competent evidence, and such weight given thereto as in its judgment is right and proper: *Provided*, That all unpaid claims which have heretofore been examined, approved, and allowed by the Secretary of the Interior or under his direction, in pursuance of the act of Congress making appropriations for the current and contingent expenses of the Indian Department, and for fulfilling treaty stipulations with various Indian tribes, for the year ending June 30, 1886, and for other purposes, approved March 3, 1885, and subsequent Indian appropriation acts, shall have

priority of consideration by such court, and judgments for the amounts therein found due shall be rendered, unless either the claimant or the United States shall elect to reopen the case and try the same before the court, in which event the testimony in the case given by the witnesses and the documentary evidence, including reports of Department agents therein, may be read as depositions and proofs: *Provided*, That the party electing to reopen the case shall assume the burden of proof.

SEC. 5. That the said court shall make rules and regulations for taking testimony in the causes herein provided for, by deposition or otherwise, and such testimony shall be taken in the county where the witness resides, when the same can be conveniently done, and no person shall be excluded as a witness because he is party to or interested in said suit, and any claimant or party in interest may be examined as a witness on the part of the Government; that the court shall determine in each case the value of the property taken or destroyed at the time and place of the loss or destruction, and, if possible, the tribe of Indians or other persons by whom the wrong was committed, and shall render judgment in favor of the claimant or claimants against the United States, and against the tribe of Indians committing the wrong, when such tribe can be identified.

SEC. 6. That the amount of any judgment so rendered against any tribe of Indians shall be charged against the tribe by which, or by members of which, the court shall find that the depredation was committed, and shall be deducted and paid in the following manner: First, from annuities due said tribe from the United States; second, if no annuities are due or available, then from any other funds due said tribe from the United States, arising from the sale of their lands or otherwise; third, if no such funds are due or available, then from any appropriation for the benefit of said tribe, other than appropriations for their current and necessary support, subsistence, and education; and fourth, if no such annuity, fund, or appropriation is due or available, then the amount of the judgment shall be paid from the Treasury of the United States: *Provided*, That any amount so paid from the Treasury of the United States shall remain a charge against such tribe, and shall be deducted from any annuity, fund, or appropriation hereinbefore designated which may hereafter become due from the United States to such tribe.

SEC. 7. That all judgments of said court shall be a final determination of the causes decided and of the rights and obligations of the parties thereto, and shall not thereafter be questioned unless a new trial or rehearing shall be granted by said court, or the judgment reversed or modified upon appeal as hereafter provided.

SEC. 8. That immediately after the beginning of each session of Congress the Attorney-General of the United States shall transmit to the Congress of the United States a list of all final judgments rendered in pursuance of this act in favor of claimants and against the United States, and not paid as hereinbefore provided, which shall thereupon be appropriated for in the proper appropriation bill.

SEC. 9. That all sales, transfers, or assignments of any such claims heretofore or hereafter made, except such as have occurred in the due administration of decedents' estates, and all contracts heretofore made for fees and allowances to claimants' attorneys, are hereby declared void, and all warrants issued by the Secretary of the Treasury, in payment of such judgments, shall be made payable and delivered only to the claimant or his lawful heirs, executors, or administrators or transferee under administrative proceedings, except so much thereof as shall be allowed the claimant's attorneys by the court for prosecuting said

claim, which may be paid direct to such attorneys, and the allowances to the claimant's attorneys shall be regulated and fixed by the court at the time of rendering judgment in each case and entered of record as part of the findings thereof; but in no case shall the allowance exceed 15 per cent. of the judgment recovered, except in case of claims of less amount than \$500, or where unusual services have been rendered or expenses incurred by the claimant's attorney, in which case not to exceed 20 per cent. of such judgment shall be allowed by the court.

SEC. 10. That the claimant, or the United States, or the tribe of Indians, or other party thereto interested in any proceeding brought under the provisions of this act shall have the same rights of appeal as are or may be reserved in the statutes of the United States in other cases, and upon the conditions and limitations therein contained. The mode of procedure in claiming and perfecting an appeal shall conform, in all respects, as near as may be, to the statutes and rules of court governing appeals in other cases.

SEC. 11. That all papers, reports, evidence, records, and proceedings now on file or of record in any of the Departments, or the office of the Secretary of the Senate, or the office of the Clerk of the House of Representatives, or certified copies of the same, relating to any claims authorized to be prosecuted under this act shall be furnished to the court upon its order or at the request of the Attorney-General.

SEC. 12. To facilitate the speedy disposition of the cases herein provided for in said Court of Claims, there shall be appointed, in the manner prescribed by law for the appointment of assistant attorney-generals, one additional assistant attorney-general of the United States, who shall receive a salary of \$2,500 per annum.

SEC. 13. That the investigation and examinations, under the provisions of the acts of Congress heretofore in force, of Indian depredation claims shall cease upon the taking effect of this act, and the unexpended balance of the appropriation therefor shall be covered into the Treasury, except so much thereof as may be necessary for disposing of the unfinished business pertaining to the claims now under investigation in the Interior Department, pending the transfer of said claims and business to the court or courts herein provided for, and for making such transfers and a record of the same, and for the proper care and custody of the papers and records relating thereto.

And that the Senate agree to the same.

G. C. MOODY,

A. S. PADDOCK,

CHARLES J. FAULKNER,

Managers on the part of the Senate.

BINGER HERMANN,

B. W. PERKINS,

SILAS HARE,

Managers on the part of the House.

IN THE SENATE OF THE UNITED STATES.

MARCH 2, 1891.—Presented and ordered to be printed.

Mr. SHERMAN, from the Committee on Foreign Relations, presented the following

Letter from the Secretary of State, transmitting a translation of a joint resolution of the Congress of Brazil expressing the thanks of the people of that country for the joint resolution of the Congress of the United States approved February 19, 1890, congratulating the people of Brazil on their adoption of a republican form of government.

DEPARTMENT OF STATE,
Washington, February, 28, 1891.

SIR: I have the honor to inclose herewith for your information a copy of a dispatch, No. 100, dated the 22d ultimo, from our consul-general at Rio de Janeiro, inclosing the translation of a joint resolution of the Congress of Brazil expressing the thanks of the people of that country for the joint resolution of the Congress of the United States, approved February 19, 1890, congratulating the people of Brazil on their adoption of a republican form of government.

I have the honor to be, sir, your obedient servant,

JAMES G. BLAINE.

Hon. JOHN SHERMAN,
Chairman of the Committee on Foreign Relations,
United States Senate.

No. 100.] CONSULATE-GENERAL UNITED STATES OF AMERICA,
Rio de Janeiro, January 22, 1891.

Hon. WILLIAM F. WHARTON,
Assistant Secretary of State, Washington, D. C.:

SIR: I have the honor to send you the following important inclosures:

(1) The expression of cordial regard to the United States of America for their expression of opinion looking to the maintenance of the republican institutions established in Brazil and the happiness and prosperity of the Brazilian people thereunder; said joint resolutions were passed with tremendous applause during my sitting in the diplomatic gallery.

The death of Gen. Benjamin Cenant, minister of public instruction, is generally deplored. He was a man of great ability, unyielding devotion to republicanism, and of proverbial integrity of character.

(3) The cabinet of ministers have resigned, giving as a reason the passing of the constitution to its second reading, which will, when pro-

mulgated, oblige them all to resign as incompatible; but the real reason is that they refuse to approve a decree granting a guaranty of interest on some millions required by the generalissimo to build a new port, that of Torres in the State of Rio Grande do Sul, and moreover the fact that all the ministers were determined to place bounds to what they call the ambition of Generalissimo Deodoro.

I am proud to recognize and transmit to my Government the fact of a growing sentiment of regard and fraternal feeling on the part of the youngest of all American republics towards the oldest of all. Such indications in future I shall watch with untiring interest.

I have the honor, sir, to be your obedient servant.

O. H. DOCKERY,
Consul-General.

[Translation.]

MESSAGE.

The Constituent Congress of the United States of Brazil, at its first session, opened and effected at the city of Rio de Janeiro, on the 15th of November, in the year 1890, first year of the Republic of Brazil:

JOINT RESOLUTION.

The Senate and the Chamber of Deputies of the United States of Brazil, met together as a Constituent Assembly, have resolved:

To express, by means of this message, in the name of the people of Brazil, to the people of the United States of America, the feelings of gratitude inspired in their breasts by the friendly terms of the highly honorable message of congratulation voted and adopted by the Congress of the United States;

To affirm once again and by the present means the sentiments of union and fraternity which binds the people of Brazil to the American nation, in the earnest desire to maintain and honor the institution of a republican form of government in Brazil, endeavoring to secure by the happiness and prosperity of the Brazilian family the peace and prosperity of all nations.

Let this joint resolution be communicated to the chief of the provisional government in order that it be caused to arrive to the hands of the high representatives of the Government and of the people of the United States of America.

This joint resolution, being submitted to the consideration of the two bodies, met as a constituent assembly on the occasion of the constitution being passed to its second reading, was unanimously adopted.

JANUARY 21, 1891.

A resolution was adopted, amidst a round of applause, that the constitution, as soon as adopted by the Constituent Assembly, should be immediately promulgated by the presiding officer of the same assembly.

The cabinet of ministers resigned yesterday (January 20). Gen. Benj. Constant, minister of public instruction, ex-minister of war, died on the morning of January 22. Benj. Constant was head and shoulders above all as the promoter of republicanism in Brazil.

PURCHASE OF AMERICAN INDUSTRIES BY FOREIGN CAPITAL.

TESTIMONY

TAKEN BY

THE COMMITTEE ON IMMIGRATION

OF THE

UNITED STATES SENATE,

AND

THE SELECT COMMITTEE ON IMMIGRATION AND NATURALIZATION

OF THE

HOUSE OF REPRESENTATIVES,

IN RELATION TO

THE PURCHASE OF AMERICAN INDUSTRIES BY FOREIGN CAPITAL.



WASHINGTON:
GOVERNMENT PRINTING OFFICE.

1891.

IN THE SENATE OF THE UNITED STATES.

MARCH 2, 1891.—Referred to the Committee on Immigration and ordered to be printed.

Mr. CHANDLER, from the Committee on Immigration, submitted the following

REPORT:

The Senate Committee on Immigration and the House Select Committee on Immigration and Naturalization, acting under that portion of the concurrent resolution of Congress of March 12, 1890, which gave authority "to investigate the effect on immigration, and incidentally on American workingmen, which is likely to follow the purchase of American industries by foreign capital," have begun an investigation of the subject and taken some testimony thereon, which is herewith reported to the Senate to be printed.

IN THE SENATE OF THE UNITED STATES

REPORT OF THE COMMISSIONERS OF THE GENERAL LAND OFFICE

FOR THE YEAR ENDING 1880

REPORT

The General Land Office has the honor to acknowledge the receipt of the report of the Commissioner of the General Land Office for the year ending 1880. The report contains a full and complete statement of the business of the office during the year, and is a valuable contribution to the knowledge of the public lands of the United States. The report is divided into two parts, the first of which contains a general statement of the business of the office, and the second of which contains a detailed statement of the business of the office in each of the several departments. The report is a valuable contribution to the knowledge of the public lands of the United States, and is a valuable contribution to the knowledge of the business of the General Land Office.

PURCHASE OF AMERICAN INDUSTRIES BY FOREIGN CAPITAL.

TESTIMONY TAKEN BY THE COMMITTEE ON IMMIGRATION OF THE UNITED STATES SENATE AND THE SELECT COMMITTEE ON IMMIGRATION AND NATURALIZATION OF THE HOUSE OF REPRESENTATIVES, IN JOINT SESSION.

WASHINGTON, D. C., *December 31, 1890.*

The joint committee met at 10 o'clock a. m.

Present: Senators Chandler (chairman), Hale, and Power, and Representative Owen, of Indiana.

The concurrent resolution of the Senate and House of Representatives, adopted March 12, 1890, authorizing the investigation, is as follows:

Resolved by the Senate (the House of Representatives concurring), That the Senate Committee on Immigration and the House Select Committee on Immigration and Naturalization be, and hereby are, authorized jointly to investigate the workings of the various laws of the United States and of the several States relative to immigration from foreign countries to the United States, especially the law of Congress "to regulate immigration," approved August 3, 1882; and also to investigate the workings of the contracts made by the Secretary of the Treasury under said law of August 3, with the various State commissions, boards, and officers; and also to investigate the effect on immigration, and incidentally on American workingmen, which is likely to follow the purchase of American industries by foreign capital; and also to report to Congress the official correspondence on the proposal to make Bedloe's (Liberty) Island, in the harbor of New York, an immigrant depot, what title the Government has to such island, what buildings, if any, are intended to be built on said island, and what officers and employes it is designed to employ thereon in connection with such immigration, and whether, in the opinion of the committees, after investigation, such island is the best and most suitable place for such immigrant depot; the investigation to be conducted at such times and places as said committees may deem proper. And the committees are hereby authorized jointly, as full committees or through subcommittees thereof, to send for and examine persons, books, and papers, and to administer oaths to witnesses.

Adopted March 12, 1890.

TESTIMONY OF CHARLES A. PILLSBURY.

CHARLES A. PILLSBURY being first duly sworn, testified as follows:

By the CHAIRMAN:

Q. What is your name?—A. Charles A. Pillsbury.

Q. Where do you reside?—A. Minneapolis, Minn.

Q. What is your business?—A. I am a flour miller.

Q. State whether or not the mills which you have owned have recently been sold to an English syndicate?—A. They have.

Q. To whom has the conveyance of the mills been made?—A. The conveyance of the mills was made to Carey & Whittridge, of New York.

Q. What is their address?—A. Wall street, New York, over Brown Brothers.

Q. Where is the present title to the real estate and machinery?—A. I think the present title is in a company organized in New Jersey.

Q. Is a majority of the stock in that company owned abroad?

The WITNESS. Do you mean the New Jersey company?

The CHAIRMAN. Yes, sir.

A. I do not know anything about that.

Q. State whether or not the majority control of the property sold is supposed to be owned abroad at this time?—A. Well, if you refer to the New Jersey company, I do not know anything about that. I was away all during the summer when it was done, but I suppose a majority of the stock is owned abroad.

Q. State more distinctly your knowledge as to where the present record title to the real estate is?—A. I think the record title is in the Pillsbury-Washburn Flour Milling Company of New Jersey.

Q. You may state, Mr. Pillsbury, what mills were included in the sale, their number, size, and capacity?—A. The mills which were owned by C. A. Pillsbury & Co., with a nominal capacity of about 10,000 barrels a day, and two mills owned by the Washburn Milling Company, with a capacity of about 3,000 barrels per day.

Q. Where are those mills situated?—A. Four of them are in Minneapolis and one in Anoka, about 20 miles from Minneapolis.

Q. Making five mills in all?—A. Yes, sir.

Q. What is the present total capacity of these mills?—A. The nominal capacity now is about 14,000 barrels; the actual working capacity about 12,500 barrels.

Q. Twelve thousand five hundred barrels, at \$4 a barrel, would be a product of about \$50,000 a day?—A. Yes, sir.

Q. Now you may state the terms and details of the sale of this property, the parties to it, and the consideration, and any other facts that you have no objection to stating?—A. The property was sold in connection with other property, the water-power company, the Minneapolis Mill Company, and the St. Anthony Water-Power Company.

Q. What was included in the sale in addition to the five mills?—A. The property of the St. Anthony Water-Power Company, the Minneapolis Mill Company, and a line of elevators in the country belonging to the Minneapolis and Northern Company.

Q. Give the number and location of those elevators?—A. About 130 elevators, situated along the line of the St. Paul, Minneapolis and Manitoba, now the Great Northern Railroad.

Senator WASHBURN. Also the Atlantic elevators.

The WITNESS. And then some stock in a small elevator company, called the Atlantic Elevator Company, on the Sault Ste. Marie Railroad.

By the CHAIRMAN:

Q. Was there any other property included in the sale?—A. That was the whole of it.

Q. What was the consideration?—A. The total consideration was about \$8,000,000.

Q. To whom was the sale made?—A. The sale was made, as I say, to Carey & Whittridge of New York.

Q. Representing a company to be organized in Europe?—A. As I understand it the English company leases the property and runs it.

Senator WASHBURN. An option was given to a London company?

The WITNESS. Yes, sir; through Carey & Whittridge.

By the CHAIRMAN:

Q. English parties represented by Carey & Whittridge?—A. Yes, sir.

By Senator HALE:

Q. They represented a London company? The negotiations were through Carey & Whittridge representing a London company?—A. Yes, sir.

By the CHAIRMAN:

Q. State more specifically the terms of the sale?—A. The two water-power companies were entirely separate, the Washburn Milling Company was entirely separate, the mills of C. A. Pillsbury and the elevators were all controlled by C. A. Pillsbury & Company, and the stock in the Atlantic Elevator Company was owned by different individuals, and terms were made with the different individuals.

Q. You say the sale was for \$8,000,000?—A. That included \$1,750,000 which was left in the business for cash as working capital.

Q. It was a part of the eight million?—A. It is now in the business as working capital, operating capital.

Q. Now state the terms of the agreement?—A. The Pillsbury mills and elevators were sold for about \$4,200,000.

Q. Was it an absolute and unconditional sale?—A. An absolute and unconditional sale, only that a part of the purchase money was taken in stock of the company.

Q. What was the total stock to be in the new company?—A. Five millions in stock and \$3,000,000 in debentures.

Q. What proportion of the stock and debentures did the Pillsburys take in payment of their property?—A. One million one hundred thousand of stock and debentures.

Q. What was the proportion of stock?—A. That was about one-fourth.

Q. What proportion of the \$1,100,000 was in stock and what proportion in debentures?—A. Six hundred thousand in stock and \$500,000 in debentures.

By Senator HALE:

Q. How was the balance paid?—A. In cash.

By the CHAIRMAN:

Q. What sum was paid in cash?—A. About \$3,000,000.

Q. Now the other properties conveyed—the Washburn mills; do you know the terms of that sale?—A. I do not know exactly. I think the contract for the Washburn mills was for a million dollars.

Q. Mr. Washburn can state that. I only want your impression. What proportion of the eight millions is stock?—A. Five millions.

Q. What proportion of the five millions, as you understand it, is now held in this country and what proportion abroad, or was to be held abroad by the original agreement?—A. I think there is a large amount held in this country that I do not know anything about. Morton, Bliss & Company are large stockholders. I do not know how large.

Q. Did the original agreement provide that a majority of the stock should go abroad?—A. There was nothing said about that.

Q. Was it provided that a majority of the stock should go into the

hands of the new holders?—A. No. We agreed to take a certain amount of stock.

Q. The stock which the old owners received as a part of the purchase money; was that anywhere near a majority of the stock?—A. It was not anywhere near a majority of the stock.

Q. Can you tell whether a majority of the stock is now in this country or in England?—A. I think a majority is now in England, though I do not know exactly.

Q. What was the number of shares and the value of each share?—A. The shares are ten pounds sterling each. That would be a hundred thousand shares.

Q. The value of the shares is expressed in pounds sterling?—A. Yes, sir.

Q. Now, state generally any other conditions of the sale, especially with reference to the future management of the business?—A. I agreed to manage the business for at least 5 years.

Q. On a salary?—A. Yes, sir.

Q. Did the company agree to employ you that length of time? Was it a mutual agreement which binds them to retain you for that length of time?—A. I am under the impression that they do not agree to retain me. I agree to remain.

Q. And they are at liberty to dispense with your services whenever they desire, so far as you understand?—A. I should think so. I have never examined the contract carefully.

Q. You may state now how many men are employed in these mills altogether?—A. About 700 or 800.

Q. State the classes of employés?—A. They are generally high grade men.

Q. What are the names of the different classes of employés?—A. We have the millers, mill-wrights, packers, and we use the general word "roustabout" for all common laborers, and oilers, and machinists.

Q. Please give the wages that you have been paying these different classes of workmen?—A. Our average pay-roll—I made it up two or three years ago—was about \$2.50 a day, but by a system of distribution of profits I remember to have brought that average up to \$3.11 for the 800.

Q. Three dollars and eleven cents each per day for the 800?—A. Yes, sir. Out of about 7 years we divided profits in 4 years.

By Representative OWEN:

Q. Is that system continued under the new arrangement?—A. Yes, sir.

Q. Does the average remain the same?—A. Just about the same with the distribution of profits. That is not a sure thing. It is only in case the company earns it.

By the CHAIRMAN:

Q. Did that system prevail in the mills as conducted by you before the sale?—A. Yes, sir.

Q. And is conducted by the new company?—A. Yes, sir.

Q. State in a general way the nationality of the workmen in your mills?—A. I should think about one-half are native born, and the other half are about the average population of the Northwest—Irish, Scandinavians and Germans.

Q. And your impression is that about one-half of the employés are native Americans?—Yes, sir. I should say one-half are, possibly a majority are.

Q. Have you had any policy heretofore in the employment of men? Have you preferred Americans?—A. We have sought to secure the best men. The only aim has been to get the best men.

Q. And you have employed indifferently men of all nationalities?—Yes, sir.

Q. Has there been any change in that respect?—A. Not the least. In an address of thanks the men tendered to me they called my attention to the fact that there had been hardly any change in the personnel of the mills.

Q. In what period of time?—A. For several years. They said that over 90 per cent. of the men had been there for several years.

Q. Is that not due in part to this system of profit-sharing?—A. Yes, sir; it makes them very loath to leave. They have to stay a certain time to be entitled to that, and if they leave they lose it.

By Senator POWER:

Q. Is that a coöperative arrangement?—A. No, sir. It is a distribution after we have earned a fair interest on the property.

By the CHAIRMAN:

Q. It is a voluntary donation?—A. Yes, sir.

By Senator POWER:

Q. That makes it coöperative in a certain sense?—A. It is voluntary.

By the CHAIRMAN:

Q. It is a system of donation?—A. Yes, sir.

Q. Voluntary profit-sharing?—A. Yes, sir.

Q. You do not consider it a contract with the men?—A. No, sir.

Q. And you make up your accounts on certain principles, for which you are responsible, but in which the men have no legal rights?—A. Yes, sir.

Q. And when you have done that you announce the result?—A. Yes, sir.

Q. Can you tell what amount in percentage was paid in extra compensation?—A. In different years from \$30,000 to \$40,000.

Q. Have you found that that system works well?—A. Very satisfactorily.

Q. Will you now state, if you have not already done so, whether or not there have been any changes made to any extent in the employment of men since the sale to the new company?—A. None whatever.

Q. Has there been any material change in the manner of conducting the business?—A. None whatever.

Q. Was any contemplated in the sale?—A. Nothing that I know of.

Q. Was there any expectation that the class of laborers should be new or different?—A. Nothing of the kind has ever been hinted at.

Q. Has any imported labor been introduced into the mills since the change?—A. Not that I know of; not imported labor. Of course, if there happens to be a vacancy in the roustabouts the foreman hires a man.

Q. There has been no change made as a part of any system or purpose?—A. No, sir.

Q. Will you state, Mr. Pillsbury, in a general way, what were the motives which influenced you and your associates in selling your property to this English syndicate?—A. Why, we were asked to name a price for the property. We named what we thought was a good price.

10 PURCHASE OF AMERICAN INDUSTRIES BY FOREIGN CAPITAL.

We considered, to use a business expression, that we had too many eggs in one basket; we thought we would like to scatter them somewhat.

By Senator POWER:

In other words, you got your price?—A. Yes, sir.

By the CHAIRMAN:

Q. How was the business conducted previous to the sale?—A. By partnership.

Q. Consisting of whom?—A. John S., George A., F. C., and C. A. Pillsbury.

Q. All of the same family?—A. Yes, sir.

Q. In a general way, you had several millions of dollars invested in these mills and the elevator system?—A. Yes, sir.

Q. These elevators were very widely distributed?—A. They were at about every station on the line of the railroad, reaching, perhaps, 300 miles from Minneapolis.

Q. Did you originate the movement to sell the property, or were you requested to name a price?—A. We were requested to give a price.

Q. Now you may state, if you please, what were the motives of the English capitalists who went into this venture in purchasing the property?—A. I suppose, to invest their money in a good investment.

Q. Do you know of any other motive?—A. No, sir.

Q. They believed that they could make more out of their money that way than they could at home?—A. I suppose so.

Q. State the number of directors in the new company?—A. There are seven.

Q. You may state how many are American and how many are English?—A. Four English and three American.

Q. Give the names, so far as you recall them?—A. The English directors are Richard H. Glynn, Sydney J. Klein, John Jackson, and A. H. Rose.

Q. And who are the American directors?—A. The American directors are Senator Washburn, ex-Governor Pillsbury, and myself.

Q. Were your agreements to sell this property in writing?—A. Yes, sir.

Q. The transaction was initiated and consummated as the result of written agreements.—A. Yes, sir.

Q. Were there any essential or important conditions of the sale which were not expressed in writing?—A. Nothing whatever.

Q. There was no oral understanding of any kind which modified the agreement?—A. No, sir; nothing that I know of. It was a pure business transaction.

Q. Do you know whether or not the condition of the workmen of your mills or anywhere else has been in any way varied, or affected, or injured by this change in the manner of doing business?—A. I do not think any man would know there had been a change in the business unless he saw it in the newspapers.

Q. Do you think this property is capable of earning a sufficient sum to make due returns for the money invested?—A. I think it is, if well managed. Everything depends upon the management.

Q. You have already stated, I believe, that no special change in the management was contemplated whatever?—A. None whatever.

Q. How long has the new management been going on?—A. Since a year ago last November.

Q. Have dividends been paid upon the stock?—A. Yes, sir; last September.

By Senator HALE:

Q. Tell us how these mills and property were built up originally, and by whom; take for instance that part of it that your company owned; when were these mills built?—A. We have had fires. We commenced business 21 years ago.

Q. Who commenced?—A. I did. I am the original founder of the business.

Q. You started it in the beginning?—A. Yes, sir.

Q. And you have gone on and increased your plant?—A. Yes, sir; our business increased very rapidly, indeed. I first commenced making only 300 barrels a day.

Q. That mill was owned by you?—A. Yes, sir.

Q. As you amplified and increased your mills you took in your brother and others?—A. I took in my brother, my father, and my uncle.

Q. They are all American citizens?—A. Yes, sir.

Q. And you developed this great property in that way?—A. Yes, sir.

Q. Holding the property and employing men and sharing the profits in this company of yours, which was a company of American citizens?—A. Yes, sir.

Q. And owned by American citizens at the time of the sale?—A. Yes, sir.

Q. So that whatever of the profit there was that was not distributed to the men went to your concern, composed of American citizens. Now the other properties that were involved in that sale, what was their condition so far as you know?—A. The condition was the same.

Q. American men engaged in it and American men sharing and dividing the profits?—A. Yes, sir.

Q. It was an American concern?—A. Yes, sir.

Q. Now was there any arrangement between those different parties; did you have any control over the Washburn mills, or they over you?—A. Not the remotest.

Q. You were competing concerns rather than joint concerns?—A. Yes, sir.

Q. Now, when this property was sold it all made an aggregate and passed under the control of one corporation?—A. Yes, sir.

Q. So that competition ceased to the extent that it existed before?—A. You will understand, Senator, that there are lots of other mills in Minneapolis.

Q. I am not going into that. So far as this property we have been speaking of is concerned, it was put under one control as an aggregate when the sale was made?—A. Yes, sir.

Q. And all of your mills and the Washburn Mills and the elevators made an aggregate?—A. I would like to have you understand that the C. C. Washburn Milling Company, the big concern, is not in it.

Q. I am only referring to the Washburn Mills that came in. So that this business, which represents 8 millions of dollars, is to-day in the control of this company, of which a majority are English capitalists?—A. Yes, sir.

Q. Now the power of that corporation and the directors, as to the method of doing business, or the changes they may make at any time, is, so far as it goes, absolute?—A. Yes, sir.

Q. You are engaged now under that agreement that you have made, assented to for the time being by the directors to conduct the business, but if the majority of the board of directors saw fit to change that to-morrow, you know of no power to hinder it?—A. Well, so far as I am

concerned, I had a clause put in the contract that if I did not like the instructions I could resign at any time.

Q. But there is no power to prevent them from making a change?—
A. No, sir.

Q. Do you know of anything in the agreement or in the present conditions that would prevent the board of directors, a majority of whom are Englishmen, stopping the feature of dividing profits, to an extent, with the workmen, if they chose to do so?—A. They have the same power we had before.

Q. It is the same power you had before in your different corporations?—
A. Yes, sir.

By Senator POWER:

Q. When did you commence distributing profits? Did you start the business in that way?—A. No, sir; we commenced about 8 or 9 years ago.

Q. What was the percentage of increase under the system of profit sharing?—A. I figured it up once at a little over 20 per cent.

Q. The average?—A. Yes, sir.

By Representative OWEN:

Q. I understood you to say, Mr. Pillsbury, that the average daily rates were \$2.50, and under the profit-sharing system they amounted to \$3.11. You began the profit-sharing system about 9 years ago. Have you kept it up to this time?—A. Yes, sir.

Q. And is it now in operation?—A. Yes, sir; when we have profits to divide. We have not had them every year.

Q. When did you make the last distribution?—A. Last September.

Q. This last September?—A. Yes, sir.

Q. Do you know anything of the purchase of slaughtering houses and interests at Hammond, Ind., by an English syndicate?—A. No, sir.

Q. Do you know anything of the purchase of other American industries by English capitalists?—A. Only what I have seen in the newspapers; I have heard of nothing. There is always a lot of rumors that do not amount to anything, and this is especially true of a year ago when these things were going on pretty lively. You could hear almost every day of some industry being sold out.

Q. You have no information beyond the newspaper reports?—A. No, sir; I have had nothing to do with any negotiations.

By the CHAIRMAN:

Q. Have distinct cases come to your knowledge even by hearsay?—
A. I think I know of Frank Jones, the same as you do.

Q. Frank Jones I have heard of; there may be others out West. Take the Otis Steel Company.—A. I have seen it mentioned in the papers that they had sold out, as also some elevators in Chicago.

Q. You have a general knowledge of what is going on. You made this sale of 8 millions of property, and if any large transactions in this or other industries have taken place you know about them?—A. There has been a sale of elevators up in the Northwest called the Vandusen system of elevators.

Q. Where are they located? Particularize about them.—A. The headquarters are at Minneapolis.

Q. Who is the person in charge of those elevators?—A. Mr. George W. Vandusen, of Rochester, Minn.

Q. That is one piece of information. Now give us another.—A. There are some elevators in Chicago which have been sold.

Q. Can you give the names?—A. I think the manager is P. B. Weare.

Q. Of Chicago?—A. Yes, sir.

Q. Now state in a general way any other cases of which you have heard?—A. The Otis Steel Works I do not know anything about.

Q. You have heard they were sold?—A. Yes, sir; that is all I remember.

Q. Have you not heard of some breweries being sold?—A. Yes, sir; but I can not remember them.

Q. You undoubtedly know of flour mills?—A. I know of no other flour mills which have been sold.

Q. State, if you please, about other flour mills. I omitted to ask you about other flour mills in Minneapolis and in Minnesota. What other large flour mills are there?—A. The largest flour concern is the C. C. Washburn Milling Company.

Q. How many mills have they and what is their capacity?—A. They have a capacity of 7,000 or 8,000 barrels a day.

Q. Who owns them and who manages them?—A. The heirs of C. C. Washburn own them and they are managed by the Washburn-Crosby Company.

Q. Has Senator Washburn any interest in those mills?—A. I think Senator Washburn has a small interest—quite small.

Q. What other mills are there?—A. There are probably a dozen other mills in Minneapolis, with a capacity of possibly 14,000 or 15,000 barrels a day.

Q. Making a total capacity for Minneapolis of how much?—A. With a nominal capacity of about 35,000 barrels.

Q. What is the population of the city?—A. The Census gives us but 167,000 or 168,000.

Q. Give us the names of other flour mills of magnitude in Minnesota?—A. I think the mills, large and small, of Minnesota, of all kinds, might have a capacity nearly as large as those in Minneapolis.

Q. Minneapolis has one-half of the whole State?—A. Probably more than one-half.

Q. Are there any other large concerns in the State?—A. None outside of Minneapolis.

Q. Is there a place near Minneapolis called St. Paul?—A. Yes, sir.

Q. Do you know the population of St. Paul?—A. I know what the Census says.

Q. What is that?—A. About 132,000 or 133,000.

Q. Have they any flour mills of any size?—A. Only one, and that quite a moderate-sized one.

Q. They have no water power at St. Paul proper?—A. No, sir.

Q. I understand you to say that you know of no sales of flour mills to English syndicates outside of Minneapolis?—A. No, sir.

Q. Nor in this country?—A. No, sir.

Q. So that no monopoly has been created in the manufacture of flour, except to the extent which the combination of mills which produce 12,000 barrels would create?—A. No sir. I think there are thirty or forty thousand flour mills in the country.

Q. Possibly you have in mind the annual product?—A. The product of the flour mills in the United States is nearly 75,000,000 barrels.

Q. A year?—A. Yes, sir; probably the largest industry, not excepting iron.

By Senator POWER:

Q. You say the manufacture of flour is the largest industry in the United States, not excepting iron?—A. Yes, sir, I think so.

By the CHAIRMAN:

Q. Where were you and Mr. George A. Pillsbury and Mr. John S. Pillsbury born?—A. In New Hampshire.

At 12 o'clock m. the joint committee adjourned to meet at the call of the chairman.

WASHINGTON, D. C., *January 26, 1891.*

The committees met in joint session at 10 o'clock a. m.

Present: Senators Chandler (chairman), Hale, Power, and McPherson, and Representatives Owen, Lehlbach, and Oates.

TESTIMONY OF FRANK JONES.

FRANK JONES, being duly sworn, testified as follows:

By the CHAIRMAN:

Q. Where do you reside and what business do you now follow?—A. I reside at Portsmouth, N. H.; am engaged in manufacturing, railroads, hotels, and banking. I am the manager of the Frank Jones Brewing Company, of Portsmouth, N. H., also of the Bay State Brewery, at South Boston, formerly owned by Jones, Cook & Co.

Q. By whom are those breweries now owned?—A. They were disposed of in London.

Q. And in whom is the title now?—A. The titles are in the names of trustees, who hold the same for the benefit of both American and European shareholders; of the European shareholders I believe the list comprises more than 5,000 names, of whom a large proportion are holders in Ireland of a small number of shares each. I and my former copartners in the brewing business and my friends in Boston still hold about one-half of the total capital of the company as now organized.

Q. It is owned in Great Britain by individuals or a corporation?—A. By a corporation.

Q. State as accurately as you can how the record title of the real estate in Rockingham County now stands.—A. I could not tell you. The deeds were recorded and are not in my custody. I never had anything to do with the drawing of the papers.

Q. Is the record title to the real estate in an incorporated company, and is that company incorporated under the laws of Great Britain?—A. No; in names of American citizens who are trustees for the shareholders.

Q. And now state more accurately the name of that company as you understand it.—A. The Frank Jones Brewing Company, limited.

Q. Did you before the conveyances were made take legal advice as to whether or not a British corporation could take this title to the real estate and other property?—A. I think there were trustees appointed to hold the property until the corporation had a legal right to hold it.

Q. State whether the title is now in the trustees or in the corporation.—A. I could not say.

Q. Do you mean to say, Mr. Jones, that you do not know whether the title of this property is in the corporation or in the trustees for the corporation?—A. Well, I said I could not say. I think it is in the trustees, if my memory serves me right. I have not looked it up.

Q. You do not know whether the trustees have conveyed it to the corporation?—A. No, sir.

Q. Was the transfer made under legal advice?—A. Yes, sir.

Q. Will you state the names of the trustees to whom the title was conveyed?—A. I could not do so here. I have some papers which I left at home which I suppose will be here at 11 o'clock. I thought they would get here early this morning.

Q. Give us your best recollection as to who they were and whether they were English or American trustees.—A. I think they were American trustees.

Q. State the names.—A. I could not do that, Senator; I can give them to you later.

Q. Can you remember any of them?—A. I do not think I could give them to you accurately.

Q. Name one of them, if you please.—A. I could not name one of them. I can give them to you after a while.

Mr. Jones subsequently furnished the names above referred to, which are as follows :

Frederick Jessup Stimson, Louis Curtis, John M. Graham, all of Boston, Mass.

Q. Now, state, if you please, when the conveyances were made.—A. March 1, 1889.

Q. Describe the breweries conveyed, including all the property that went to the trustees.

The WITNESS. Well, what do you mean; the number of feet?

The CHAIRMAN. State the number of breweries; how many there were?—A. Two.

Q. The Portsmouth brewery and the South Boston brewery?—A. Yes, sir.

Q. Those were all?—A. Yes, sir.

Q. Describe the Portsmouth brewery, giving its capacity and the number of men ordinarily employed—giving the number of men employed at the time you sold it.—A. I sold it just about the time my new brewery was completed. The capacity at Portsmouth, as run, is about 400 barrels. The 400 barrels is the amount of one brewing, and the brewery is so arranged as to make four brewings per day, making a total capacity of 1,600 barrels in 24 hours. The capacity of the South Boston brewery is about 400 barrels.

By Senator MCPHERSON:

Q. The capacity of the South Boston brewery is 400 and that of Portsmouth is 1,600 barrels daily?—A. Yes, sir; I have two breweries in one at Portsmouth, but they are not run to their full capacity.

By the CHAIRMAN:

Q. At Portsmouth?—A. Yes, sir; so that I can run every day to a smaller number if I want. I can make 100, or 150, or 400 barrels a day, or 1,600, as stated. The Portsmouth output ordinarily is 400 barrels and at the South Boston brewery it is 200 barrels.

Q. Six hundred to 650 barrels a day for both breweries? What is the ordinary selling price or value of your product daily at its maximum capacity?—A. I do not know, sir, that that is a question which it is fair for me to answer.

The CHAIRMAN. The committee does not want to pry unnecessarily into your business, but we want to get an idea of the gross amount of the business you do.

Senator MCPHERSON. The witness has given you the gross amount of the business; the capacity of his works and the output is limited only by the demand from day to day. Now, I do not under-

stand that it is the province of this committee to investigate a man's private business and have him tell you how many barrels of beer he makes every day, what he pays for his malt, and what he sells his beer for.

The CHAIRMAN. I do not mean in the execution of the instructions of the Senate and the House to make improper inquiries; but the size of your business, the amounts received and paid out are certainly competent and pertinent questions.

Senator MCPHERSON. I suppose this is more a question of labor than anything else. We as a committee are not taking statistics of the beer business of the country, and I suppose you have not subpoenaed very many manufacturers of beer to come before the committee, have you?

The CHAIRMAN. Only Mr. Jones.

Senator MCPHERSON. I have had no notice of anybody else. I saw from Mr. Pillsbury's testimony that he volunteered to come here and make such statements as he was willing to make. Now, I do not think that Mr. Jones ought to be investigated and cross-examined about the details of his business. He is perfectly willing, as I understand, to give you a general idea as to the capacity of his breweries and how many laborers are employed and the pay they receive and all that.

The CHAIRMAN. Mr. Jones, of course, will object to any question that he does not care to answer. It can not be inferred from that that there is any special reason why he does not want to answer; but I think it is our duty to ascertain the general facts in this case, and I shall ask the question now. Perhaps he will not object to it.

What is the average number of employes in each of the breweries?

The WITNESS. I have not the statistics as to the Bay State brewery. I do not know whether you have the information or not, have you, Major (to his private secretary)?

Mr. GAFFNEY. No, sir; I have not. I think Mr. Hanscom gave it in his letter.

The WITNESS. I can answer as to Portsmouth brewery for 1888 and 1889. Men employed in malt house during 1888, 28, at \$45 per month, 2 foremen, at \$80 per month. Men employed in brewery, 110, at from \$40 to \$75 per month. Monthly pay roll in March, 1889, which is the time of the sale, including the salary of men and clerks, \$7,500. The average number of employes in the Bay State is 40 to 50 men, and paid same as at Portsmouth.

By Senator MCPHERSON:

Q. That is the monthly pay roll?—A. Yes, sir.

The nationality of the men employed at that time in Portsmouth brewery was as follows:

American, 15; naturalized of Irish and English origin, 90; other foreigners, 33.

The monthly pay roll for March, 1890, was \$8,000. The number of men employed was 170.

By the CHAIRMAN:

Q. Now, have you the same figures in reference to the South Boston brewery?—A. I have not. Major, have you them?

Mr. GAFFNEY. No, sir; I have not.

By the CHAIRMAN:

Q. The figures of a similar kind as to South Boston would be about one-half?—A. I think they would.

Q. Generally speaking, the capacity of the Portsmouth brewery is

twice that of the South Boston Company?—A. More so. We have two malt houses in Portsmouth and only one at South Boston.

The monthly pay roll for July, 1890, at Portsmouth, was \$8,700; the number of men was 175. The nationality of these men was as follows: American, 20; naturalized, 120; foreigners, 35—Irish, English, and Swedes.

Monthly pay roll at South Boston, including salary of men and clerks, is about \$2,500.

Nationality of men: Fourteen Americans, 25 Irishmen (15 naturalized, 10 not naturalized), 1 German, 2 Englishmen, 1 Swede, 1 Scotchman, all naturalized.

The CHAIRMAN. I will now put in the record the letter written by me to Mr. Jones dated the 31st of March, 1890.

UNITED STATES SENATE,
Washington, D. C., March 31, 1890.

SIR: On the 12th instant Congress authorized the Senate Committee on Immigration and the House Committee on Immigration and Naturalization jointly to investigate the effect on immigration, and incidentally on American workingmen, which is likely to follow the purchase of American industries by foreign capital. I send you a copy of the resolution ordering the investigation.

It has been suggested to the committee that you have been connected with the purchase by foreign capital of American industries, namely, certain New England breweries. The object of this letter is, in the name of the committee, to ask you to furnish as soon as practicable a full statement of the transaction. The committee desires to know how much foreign capital has been invested in the industries; what are the extent and value of the industries; what were the terms of the purchase; how the industries are conducted, whether by private individuals or by a corporation or corporations; where the business is done; how many persons are employed in the industries, and what are their nativities and present citizenship, and what is the schedule of the various wages paid. The committee take it for granted that you will prefer to furnish a full statement covering the whole history of the business prior to testifying as a witness before the committee, and an opportunity is therefore given you of submitting the same, of which the committee do not doubt you will at once avail yourself.

Please acknowledge the receipt of this letter by return mail naming a date on or before which you will furnish the information desired.

Yours, truly,

WILLIAM E. CHANDLER,
Chairman of the Senate Committee on Immigration.

Hon. FRANK JONES,
Portsmouth, N. H.

In answer there was received the following letter from J. V. Hanscom, treasurer, dated Portsmouth, April 8, 1890.

OFFICE OF THE FRANK JONES BREWING COMPANY,
Portsmouth, N. H., April 8, 1890.

Hon. W. E. CHANDLER,
United States Senate, Washington, D. C.:

DEAR SIR: Your communication of March 31, relating to the affairs of this company and addressed to one of its directors, was duly received. I also have before me, by your kindness, the resolution adopted March 12, 1890, in regard to the investigation of the various laws, Federal and State, relative to immigration and naturalization, and also in regard to the proposal to make Bedloe's Island, in the harbor of New York, an immigrant depot, and to examine its title. Under this resolution, as chairman of the committee, you propound certain questions, which by answering may throw light on the subject that you have under consideration, but which I think a little remote. Anything that this company could do to enlighten or make easy the duties of your committee in the investigation before them would be done with pleasure. You say it has been suggested to the committee that certain brewery industries have been purchased by foreign capital, and ask that a full statement of the transaction be furnished, under the terms of the resolution, for the information of the committee.

The organization of the Frank Jones Brewing Company and the amount of its property are matters of public record, and it can not be, from the terms of your resolution, that your inquiry was intended to go beyond this limit. Concerning the

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management there is practically no change, as the former owners are the managing directors, and I am not aware that there has been any change in the employes, many of them having worked in the breweries and malt houses for years. They are nearly all citizens of the United States, and native born, their wages ranging from \$40 to \$75 per month. The company employs about 200 men, which at some seasons of the year may be increased or diminished in number.

As an act of courtesy to one of our New Hampshire Senators I am pleased to furnish this information, but I think it no more germane to the matter of inquiry as authorized by the resolution under which your committee acts than would be the 119th Psalm.

If I can aid you further it will afford me pleasure.

Very respectfully,

J. V. HANSCOM,
Treasurer.

By Senator MCPHERSON:

Q. This is the treasurer of the Frank Jones Brewing Company? A. Yes Sir.

The CHAIRMAN. I then wrote to Mr. Jones on April 14 a letter, which I will read:

UNITED STATES SENATE,
Washington, D. C., April 14, 1890.

SIR: In reply to my communication, addressed to you, of March 31, asking information concerning the purchase by foreign capital of certain New England breweries, I have to say that the letter which I have received from J. V. Hanscom, treasurer, dated at the office of the Frank Jones Brewing Company, Portsmouth, April 8, 1890, is not satisfactory. Not only does it fail to give the information desired, but it is hardly courteous, although claiming to be so.

I inclose you another copy of the resolution under which the committee is acting, and have to request you to appear before the committee and testify in Washington as a witness concerning the subject-matter of the inquiry directed by Congress. Please inform me how soon it will be convenient for you to attend.

Respectfully,

W. E. CHANDLER.

Hon. FRANK JONES, *Portsmouth, N. H.*

Mr. Jones replied under date April 17, 1890, as follows:

BOSTON AND MAINE RAILROAD, PRESIDENT'S OFFICE,
Boston, April 17, 1890.

Hon. W. E. CHANDLER,
U. S. Senator, Washington, D. C.:

DEAR SIR: I am in receipt of your favor of the 14th instant, accompanied by a resolution under which your committee is acting, and requesting my appearance to testify in Washington as a witness concerning the subject-matter of the inquiry directed by Congress. As it will subject me to great inconvenience and injury to make a trip to Washington, I would ask if you can not furnish me a list of questions such as you would require me to answer and save me the time and inconvenience of going to Washington. If your command is imperative, I shall arrange my business to leave at as early a day as possible.

Awaiting your pleasure, I remain, very respectfully,

FRANK JONES.

April 21, 1890 I wrote Mr. Jones as follows:

UNITED STATES SENATE,
Washington, D. C., April 21, 1890.

DEAR SIR: Yours of April 17 is at hand. It is not the desire of the committee to submit you to any inconvenience or to insist upon your coming to Washington unnecessarily.

Referring to my first letter, you will find indicated there the information which we desire from you, and which, I take occasion again to say, I have no doubt you will gladly furnish.

Very respectfully,

WILLIAM E. CHANDLER,
Chairman of the Senate Committee on Immigration

Hon. FRANK JONES.

Here is the reply to that, dated April 29, 1890 :

BOSTON, *April 29, 1890.*

Hon. W. E. CHANDLER,
U. S. Senate, Washington, D. C. :

DEAR SIR: Your favor of the 22d instant came duly, in which you refer to your letter of March 31, and say that the information your committee desires is indicated therein. Referring to said letter I will reply first: The sale of my brewery premises (at Portsmouth, N. H.) and the one of Jones, Cook & Co., at South Boston, was effected to date from March 1, 1889, the deeds of warranty made to Frederick Jessup Stimson, Louis Curtis, and John M. Graham, all of Boston, Mass., as trustees for the Frank Jones Brewing Company, Limited, a corporation established under the laws of the Kingdom of Great Britain. The foreign capital at present invested in the industries is about \$2,000,000; the extent and value of the industries is estimated at from 2 to 3 millions. This consideration covered the good-will of my business, which had taken 30 years to build up, and which I considered of far greater value than the real and personal property described in deeds of sale. The terms of the purchase were specified payments of cash and securities, with an agreement to conduct the business for 3 years, under which agreement the business is now conducted by me. One hundred and fifty to 200 men are employed at the works, their wages ranging from \$40 to \$75 per month, all of which, or nearly all, are Americans by birth or naturalization, the majority of Irish origin. There has been no change whatever in the management of the business nor in the help since the transfer of the property.

I am, sir, very truly, your obedient servant,

FRANK JONES.

By the CHAIRMAN:

Q. When you speak of barrels, what size barrels do you refer to?—

A. Thirty-one and one-half gallons to the barrel, sixty-three to the hogshead, beer measure.

Q. Now you may state, if you have no objection, having reference to the time when you made this sale, what the value of the annual output was estimated to be?—A. In 1881 our production was 129,600 barrels at Portsmouth, and it has been steadily increasing up to and including 1889, which shows a production of 247,500 barrels. During the time the workmen's pay has been increased from \$10 to \$15 a month.

By Senator HALE:

Q. Each workman?—A. Yes, sir.

The CHAIRMAN. You may now go on and give such statistics of this business as you are willing to give, and if we want any more we will ask for them. There certainly can be no objection to that.

By Senator MCPHERSON:

Q. Let me call the attention of Mr. Jones to this: Your output is far less in proportion than your capacity to manufacture?—A. You understand I built this new brewery. I was two years building it. I did not get into it until about the time I sold the business. I made two breweries into one. If I had a small trade I could run one; I could run one or both, and do it more economically.

By Senator HALE:

Q. You have never come up to your full capacity?—A. No, sir.

By the CHAIRMAN:

Q. Can you furnish us other statistics which you are willing to give?—A. I have not the sales of Jones, Cook & Co.

Q. At South Boston?—A. At South Boston. I can give them to you if you want them.

By Senator HALE:

Q. The figures which you have given, then, apply only to Portsmouth?—A. Yes, sir.

Senator HALE. Mr. Jones might get those figures and put them in afterward.

The WITNESS subsequently furnished the following information: Sales of South Boston brewery 29,886 barrels for year ending December 31, 1890.

By the CHAIRMAN:

Q. What are the latest figures you have given as to the output?—The year is not out. The latest that I have given you is up to February last.

Q. February, 1890?—A. Yes, sir.

Q. Do the figures which you have given indicate an increase of manufacture since March, 1889, when you sold your business to the foreign company?—A. The manufacture increased last year, but it will not this year, for the reason that there were a great many towns which did not vote to license, so that I think there will be some falling off this year.

Q. There was an increase for the first year after the organization of this company, but during the last year you think there has not been a further increase?—A. No, sir; I do not think there has been.

Q. Now you may state, if you please, the annual value of the product in round numbers of your Portsmouth brewery?—A. A million and a half dollars a year for the Portsmouth brewery. The output for that brewery in round numbers might be called \$1,500,000 a year.

Q. Having reference to the output at the South Boston brewery the annual value of the product there would be how much—a third of that sum, \$500,000?—A. I should think it would.

Q. You may state, Mr. Jones, if you please, what were the terms of the sale of these two breweries to the Frank Jones Brewing Company, what was the contract as you remember it?

The WITNESS. Would that come under the supervision of your committee?

The CHAIRMAN. I ask that question—what price you sold for and what were the terms of the sale?

The WITNESS. It is all a matter of record. It has been published in the papers.

Senator MCPHERSON. Mr. Chairman, I have read in the newspapers, until I am entirely confused about the whole matter, different statements concerning it. I have heard some extraordinary statements made, and I have heard others mentioned again afterwards which were more reasonable. Now I do not know why Mr. Jones should state how much he got for his property. I want to know, after learning from Mr. Jones the output of beer from his factory, the capacity of his factory, the amount of labor he has employed, whether they were natives or foreigners, the amount of money he has paid to them, and all that sort of thing. I want to know if this committee have a right, or if it is reasonable or even respectful for us, to follow Mr. Jones like a sleuth-hound and find out, after he has stated to whom he sold, exactly what he got for it and all that, whether he got the price in silver dollars or gold dollars or how he got it. Now, it does seem to me as though that is beyond what should be the limit of this investigation—certainly of everything that can concern this committee. Of course, I do not object to Mr. Jones giving every particle of information you ask for, if he is willing to do it, but I suppose Mr. Jones would like to know what he is obliged to answer with respect to this investigation.

The CHAIRMAN. I suppose, Senator McPherson, in order that an issue

may be made here, if it is desired to make one, that Mr. Jones should either answer or decline to answer any question which is put to him, and then the question will come before the committee as to whether he should be required to answer it. I do not undertake to determine any of these questions myself beforehand. I have not so undertaken, but have endeavored to put such questions as seem to me to be pertinent.

The language of the resolution, which I will put into the record here, is:

That the Senate Committee on Immigration and the House Committee on Immigration and Naturalization, be, and hereby are, authorized jointly to investigate * * * the effect on immigration, and incidentally on American workingmen, which is likely to follow the purchase of American industries by foreign capital.

If Mr. Jones does not object to any question, then there is nothing before us to decide. If Mr. Jones does object, we have an opportunity to consider whether or not we shall require him to answer.

Mr. MCPHERSON. Mr. Chairman, you have already asked him the question as to what effect the sale had on the labor employed in the brewery, and Mr. Jones has said, if I understand him rightly, that there has been an increase of wages since the transfer of this property; that there has been a gradual increase in the wages, as there has been an increase in the output of beer. He stated the amount of wages paid to these laborers per day. Now, it does not seem to me that the resolution covers any more than he has already answered in that direction.

The reason I interpose my inquiry, or objection, if you may call it one, is this: I do not know but that Mr. Jones feels that he is obliged to answer every question which may be asked him here, and I do not want him to believe for an instant that so far as I am concerned I would consent to questions being propounded to him which were not relevant.

Senator HALE. It seems to me that what Mr. Jones has stated in his letter of April 14 is about the thing we are seeking to get here, that the amount of foreign capital invested now in this property is nearly \$2,000,000.

The CHAIRMAN. And the value between two and three millions.

By Senator HALE:

Q. Now, Mr. Jones, have you any objection to answering this question: Is the property to-day about the same as it was when these foreign capitalists made their investment, or have they added largely to or reduced the plant?—A. We have not added the least.

Q. It is about the same?—A. Yes, sir. My second brewery was not quite finished when the sale was made and I completed some little things inside. You must remember that the price received was not for the plant alone, but it was for my trade-mark and my business.

The CHAIRMAN. You state that very distinctly in your letter.

By Representative OATES:

Q. I wish to know what property was included in the sale, whether any real estate was included?—A. Yes, sir.

Q. How much?—A. I think there are about 17 acres in Portsmouth, and I should think in South Boston—well, that is something I could not tell you—an acre, or an acre and a half, or 2 acres.

Q. What was the value of the real estate separate from the business?—A. The South Boston real estate was very valuable, as was also that at Portsmouth.

Q. About how much was it worth?—A. I do not carry those things in my memory.

By Senator HALE :

Q. Your sale included the business and everything?—A. Yes, sir; even the horses and wagons.

By the CHAIRMAN :

Q. And the good will?—A. Yes, sir; I think there are some 17 or 19 acres in Portsmouth.

Representative OATES. I do not ask you for an accurate estimate of the value of the real estate, just a rough estimate.

Senator HALE. You mean without the buildings?

Representative OATES. Of course the buildings on it would go with the real estate.

The WITNESS. The buildings are the important part, certainly in Portsmouth.

By Representative OATES :

Q. A good many other things entered into the trade, as I understand it?—A. Yes, sir.

Q. I want to know just your estimate of the value of what is comprehended in the term "real estate," the grounds and the improvements?—A. That would be pretty hard work to state. It would be very difficult to state the value under the present laws we have. If we could not manufacture it would be a very small sum. If we can, it would not be.

The CHAIRMAN. In other words, you do not undertake to separate the value of the plant from the business itself, because it would be of comparatively limited value separated from the business, and you have no idea what it would produce for other uses?

Senator MCPHERSON. Unfriendly legislation would make it comparatively valueless.

The CHAIRMAN. Mr. Oates would like to get at the value of the property for any general purpose.

Representative OATES. Yes, sir. In order that both the witness and the committee may understand my point, I will say that I have a bill pending in the House, favorably reported by the Judiciary Committee—a subject I have worked on a great deal—to put some restriction upon the alien ownership of real estate. I have all the time been collecting such information as I could as to the extent of the alien ownership of real estate in this country. That is all. I merely wanted it for information.

The CHAIRMAN. Mr. Jones has given you the information; has described the property. I can see that it is very difficult to put a value on it.

Representative OATES. I will not press the question.

The CHAIRMAN. I understand it is in order for any member of the committee as well as the witness to object, but I will ask this question: What were the terms and conditions of your sale of these breweries to the trustees for the English company, as you remember them?

The WITNESS. I would ask, Mr. Chairman, if that comes under the jurisdiction of this committee?

The CHAIRMAN. I understand it to be a competent and necessary inquiry in order to execute the instructions of Congress under this resolution. I do not see how the committee can form an opinion for Congress as to the expediency of allowing such transfers of property to foreign hands without knowing the terms of a great contract like this.

Senator McPHERSON. Mr. Chairman, this property was deeded, as I understand, to trustees who are American citizens.

The CHAIRMAN. For the benefit of an English corporation.

Senator McPHERSON. Suppose it were for the benefit of an English company. The title is in the hands of the trustees. The corporation may dissolve at any moment. The stock may be held by citizens of the United States. Of course stock is being continually transferred. I can cite an instance in my own State where the stock was taken by an English syndicate, and the stock has been transferred back until to-day I think 75 per cent. of it is held by American citizens. Now how are you going to trace a certificate of stock? How are you going to know whether it is an English stockholder or who it is?

The CHAIRMAN. That question has not arisen.

Senator McPHERSON. I understand. I am leading up to it, and I repeat I do not think it is necessary or reasonable to compel a witness to answer all of these questions which affect his private business and private affairs and nobody else.

The CHAIRMAN. How do you conceive that the committee can execute these orders of Congress? It is to investigate the purchase of American industries by foreign capitalists. Now, we have here a transaction involving several millions of dollars, a conveyance to three American trustees for a corporation asserted to be organized under English law. I ask what are the terms of that sale. Now, if we can not ascertain the amount and the general features of that sale, why we can not go on with the investigation.

Senator HALE. The committee asked Mr. Pillsbury the same questions, and he stated that while he did not volunteer the information, he told us generally the terms of the sale as he remembered them.

The WITNESS. All this has been published in the papers.

By the CHAIRMAN:

Q. Then you have no objection to giving it to the committee?—A. The terms of the sale were \$6,300,000.

The CHAIRMAN. Do you object further, Mr. McPherson, to anything the witness is willing to answer?

Senator McPHERSON. I object to an investigation which I think is entirely outside the spirit and letter of the resolution. I object to interfering with or trying to pry into a man's private affairs when it seems to me we do not need any such information. It is not necessary for the object and purpose of the investigation. We know that British capital is interested. To what extent, whether to the extent of a hundred dollars, or \$100,000, or \$5,000,000 is immaterial.

Senator HALE. Suppose, Mr. McPherson, as a citizen of the United States, he had sold a thousand acres on the Pacific coast to the British Government. That is his private affair. Could we not ask him what he got for that?

Senator McPHERSON. That is entirely different. That might be something which would be a menace to the United States. That would be property owned by a foreign government and which must be used for governmental purposes. From time immemorial British capital and French capital and German capital have been coming to this country seeking investment. It will always continue to come. They are seeking investments in those industries which promise the largest returns. It does not seem to me as though an honorable committee of Congress should undertake to investigate a man's private affairs, especially as he is dealing with private individuals. That is practically what this is.

The CHAIRMAN. Then you understand that under this resolution, when we find that property has been sold to English people or to any other foreigners, we must stop there and not ask the terms of the sale?

Senator MCPHERSON. When the stock is sold to foreigners I should say so by all means. If people outside the United States want to come here with their money and go into partnership with me in my business I should say it is no concern of Congress.

The CHAIRMAN. I say that is for Congress to determine.

Representative OATES. I understand the witness is willing to answer the question.

Senator HALE. This has been in the newspapers, as the witness states. I can not see why he should have any objection to stating it as nearly as he can recollect, inasmuch as it has been in the newspapers.

The WITNESS. It was not the value of my property alone. It was the value of my trade-mark.

By the CHAIRMAN:

Q. State the additional terms of the sale. You have given the price. State how it was paid, to whom it was paid, by whom it was paid, and what the present ownership of the Frank Jones Brewing Company, Limited, of London, in the stock is?—A. In the first place, this was put upon the market in London and was floated, and I think a majority of it was taken over there.

Q. How much were you paid for the two breweries and the plant that you conveyed to the trustees?—A. I say I received \$3,300,000.

Q. In what?—A. In stock and cash.

Q. State the proportions?—A. I think it was 54 per cent. in cash and the balance in stock.

Q. What was the capital of the company as it was placed upon the British market?—A. Six million three hundred thousand dollars was what I received.

Q. You mean you received the whole of it?—A. I took so much of the stock.

By Senator HALE:

Q. You received stock and money?—A. Yes, sir; that was the value of the plant and the trade-mark.

By the CHAIRMAN:

Q. Was the title to this property entirely in you and your partners?—A. Yes, sir.

Q. You and your partners received for the two breweries \$6,300,000 in cash, stock, and bonds?—A. In cash, stock, preference shares, and bonds.

Senator HALE. Of which 54 per cent. was in cash and the balance in stock?

By the CHAIRMAN:

Q. How much was in cash?—A. Fifty-four per cent.

Q. Was any stock issued except what you received?—A. I received so much in bonds and so much in cash.

Q. Did you receive all the bonds that were issued?—A. Oh, no.

Q. What I wanted to get at is what you retained as representing the interest which you own, and how much was put upon the London market?—A. It was all put upon the London market.

By Senator HALE:

Q. Six million three hundred thousand dollars?—A. Yes, sir; that is what it was quoted at.

By the CHAIRMAN:

Q. Be a little more specific and distinguish what you received and what was put upon the market by the promoters of the enterprise in London?—A. The whole thing was put upon the market in London.

Q. The whole \$6,300,000, either in bonds or stock, was offered for sale in the London market?—A. Subscriptions were received for the stock. I received so much money. I subscribed for stock. I had the privilege of taking so much for my friends in America.

Senator HALE. I understand Mr. Jones's first statement covers that. It was all capitalized at \$6,300,000 and put upon the market. He took 46 per cent. in stock and 54 per cent. in cash. The per cent. in cash he received was paid in by those who have the stock.

The CHAIRMAN. It was the proceeds of the sale of the securities?

By Senator McPHERSON:

Q. Do I understand that you were a subscriber to this stock in common with others?—A. Yes, sir.

By the CHAIRMAN:

Q. Now you may state, if you please, what proportion of the stock you retained under the original agreement?—A. I think some half million dollars. A majority of the stock was taken in the United States.

Q. I am asking you how much of the stock you retained?—A. I think somewhere about half a million.

Q. What was the capital stock which controls the management of the company, what was the amount of that?—A. I think it was about \$2,000,000.

Q. How much of that did you receive or retain under the original contract?—A. I think I received of that about half a million. It was taken and divided among other Americans.

Q. By the original arrangement you understand that a majority of that half a million stock was taken in America?—A. There was no arrangement about it.

Q. There was no agreement?—A. No, sir; nothing whatever.

Q. You understand that besides the half million you took the representatives of the English parties had the right to take the rest abroad if they pleased, transferring the control of the business to the foreign owners?—A. A majority of the stock was subscribed in America.

Q. Was that a part of the original agreement?—A. Yes, sir; I would not sell it any other way.

Q. Unless a majority of the stock remained in this country?—A. Yes, sir.

By Senator HALE:

Q. So far as you know—I think this is the nub of the question—is a majority of the stock of this new company, to whom the property was transferred, held to-day by American citizens?—A. It was on the last day of last February.

Q. There has nothing occurred to your knowledge to change that proportion?—A. No, sir.

Q. You believe that a majority of the stock is held in the United States?—Yes, sir; I know it was a year ago.

By the CHAIRMAN:

Q. The \$4,300,000 of bonds, debentures, or whatever you may call them, are all owned abroad?—A. More than 35 per cent. of these were taken and are held in America.

Q. None of it or to any amount at least is held in this country?—A. Yes; about 35 per cent.

Q. So that the present state of the case is, that the securities are owned abroad, stock to the extent of about \$2,000,000 a majority of it, now being held in this country.—A. My last two answers as amended I think answer this question.

Q. Was it agreed at the time that your ownership should be limited to \$500,000?—A. There was no agreement at all. When I made this trade I would not dispose of the property unless I could control it for a certain length of time.

Q. What amount of stock do you now own?—A. I own what I have always.

Q. A half million or thereabouts?—A. Thereabouts.

Q. Do you control any more than the amount which you own?—A. No man controls anything he does not own.

Q. Have you bought, either directly or indirectly, any more than you originally held?—A. Yes, sir.

Q. Now you may state what arrangements were made, and upon which you insisted, by which you were to retain control of the property to which you have alluded?—A. Various parties on the other side were after this property for 2 years before I sold it. I would not sell unless I could control a majority of the stock. They assented, provided I would manage the business for 3 years.

Q. Was that the agreement you entered into finally?—A. Yes, sir.

Q. In what way were you to control a majority of the stock?—A. Through my friends.

Q. So that you do control a majority of the stock of the company either through your own stock or that of your friends?—A. I do not know anything to the contrary.

Q. I thought you said a moment ago that a man can not control anything that he does not himself own?—A. He can not. If you, and Senator Hale, and I were in business together, we would act together.

Q. Was that a part of the original agreement with the English parties, that you and your friends in this country should control a majority of the stock?—A. There was no agreement about it at all.

Q. I thought you stated a moment ago that there was an agreement of that kind?—A. I would not sell unless a majority of it was held in this country.

By Senator McPHERSON.

Q. You were permitted by previous agreement to subscribe to a majority of the stock?—A. Yes, sir.

By the CHAIRMAN:

Q. You may state what other agreements were entered into with reference to your conducting the business for any length of time?—A. I have full control of the business.

Q. You may state now who are the officers of the company?—A. I can not at this moment; I will furnish a list.

Senator HALE. You may do that hereafter.

The witness subsequently furnished the names of the officers of the company as follows:

We have in London what we call the London board of directors, William U. Heygate, E. Murray Ind, R. Pryor, jr., Albert O. Worthington, Walter P. Bouverie, of London; Frank Jones, Samuel Untermyer, Patrick A. Collins, of America, recently elected director in place of Samuel Untermyer, resigned, who have charge of the finances of the

company, paying dividends, looking after transfer of stocks, debentures, and preference shares, etc.

In America we have what is known as the American board of management, consisting of the following named persons, who have control of the management of the business here: Frank Jones, Portsmouth, N. H.; Asa P. Potter, Boston, Mass.; P. A. Collins, Boston, Mass.; J. P. Cook, Salem, Mass.; Chas. A. Sinclair, Portsmouth, N. H.

By the CHAIRMAN:

Q. State your own relation to the company now.—A. I am chairman of the American board of management.

Q. Are you the active manager of the company?—A. Yes, sir. I have the whole control of the business in this country.

By Senator HALE:

Q. Is there any practical difference between the control you are at present exercising over the conduct of the business and what existed before this sale was made?—A. I have it written down here.

The CHAIRMAN. Then you may give the answer you have prepared.

A. The question as to the kind of help employed has never been raised by the English board, nor has a suggestion ever come from them as to the kind of labor we should employ or the amount of wages to be paid.

By Senator HALE:

Q. No suggestion has come from them?—A. Not at all.

By the CHAIRMAN:

Q. You mean to say there has been no change in the manner of doing business, which has had any effect on the laborers employed or the workmen employed in the business?—A. Not at all.

Q. Has there been any attempt to introduce English labor or English methods of manufacture in the business?—A. Not a scratch of a pen or a syllable in regard to the management of affairs.

Q. There has been no change made in the manner of doing business?—A. None whatever.

Q. Then the participation of the English people in this enterprise is solely that of an investment of money therein, so far?—A. I was told at the time that this stock is owned, a great deal of it at any rate, in as small amounts as £1 or £5, or 10 or 20, or 100 pound shares.

Q. By people who purchased it as an investment merely?—A. They issued a prospectus and put it out, and the stock was subscribed for in more than five times the amount to be issued.

Q. Do the English directors constitute a majority of the board of directors?—A. There are no other directors.

Q. They are all Englishmen?—A. Yes, sir; except myself and Gen. Patrick A. Collins, of Boston.

Q. Are there any other American directors?—A. No, sir.

Q. They have the control of the company except so far as the agreements made at the time are concerned?—A. That I should manage the company for 3 years.

By Senator MCPHERSON:

Q. Practically, the duty of the English board is simply to see to a disposition of profits, if any, to the vast numbers of stockholders?—A. Yes, sir.

By the CHAIRMAN:

Q. Was this agreement that you should manage the company for 3

years put in writing and incorporated in the original articles of agreement?—A. Yes.

Q. Did you give any guaranty about the dividends?—A. Yes, sir.

Q. What dividends did you guarantee?—A. I think it was 5 per cent. on a certain class of securities and $7\frac{1}{2}$ on the other.

Q. What guaranty did you give as to the common stock, if there is more than one kind of stock?—A. I think it was 15 per cent.

Q. And these guaranties of yours were a part of the sale, a part of the condition, and that you were to remain in the management of the company?—A. Yes, sir.

Q. Does that agreement expire at the end of 3 years?—A. Yes, sir.

Q. At the end of that time, then, there will be no hindrance to the English owners controlling the business, changing the control of it after that if they see fit?—A. They could not unless they owned a majority of the stock.

Q. And you have a majority of the stock?—A. I do not say that.

Q. You and your friends?—A. It is held in America.

Q. Then your contract really is with a company, a majority of the stock in which you own yourself?

Senator HALE. Or your friends?

A. It is owned in America.

Q. You or your American friends? Have you and your American friends enlarged your holdings since the original division of stock was made?—A. I could not speak for them. I have not. I know no more about this, not having seen the records since the annual meeting, than you do, Senator. [Correction subsequently made by Mr. Jones: "American holdings have been enlarged \$200,000."]

Q. Have the interest and the dividends which were guaranteed been paid so far?—A. They have been paid.

Q. Have they been paid from the profits of the business?—A. If they have not I have got to pay them.

Q. Then you expect to pay them?—A. Yes, sir; I guaranteed them for 3 years.

By Senator HALE:

Q. Are you willing to state—this is only a matter of business calculation—what you expect will be done at the end of the three years? Do you think it likely it will keep on in the same way it is now?—A. That I can not say. Usually the Americans look out for themselves in regard to handling these things; do they not?

Q. You have nothing, then, that leads you to believe that there will be any change in the management at the end of three years?—A. I have not the least. When I was there last year they wanted me to make a contract for three years more. I did not want to tie myself up for that length of time.

Q. You take your chance at the end of the three years?—A. Yes, sir. They wanted to tie me up for five years, but I would not.

By the CHAIRMAN:

Q. I will ask you what knowledge you have of the purchase by English parties of other American breweries, either from hearsay or otherwise?—A. I have not the least—I know they have had it in the papers at times that I was connected with their purchase or sale.

Q. You have had nothing to do with the sale of any other property?—A. No, sir.

Q. Do you know of any source to which the committee can go for information as to the purchase of American breweries by English par-

ties?—A. No; I could not tell you the first thing; I suppose the parties could tell you. It has been in the papers several times that I was floating other breweries. I never had anything to do with it in the least.

Q. You get credit for a good many things you do not do?—A. Yes, sir; we all do. And a great many things we do we get no credit for.

Q. I will read from the Boston Journal of January 6, 1891, a special dispatch from Washington, dated January 6:

The following information is deemed to be reliable as to American breweries which have already been purchased by English capitalists, who are said to have already invested the sum of \$30,000,000 in the country in breweries.

The Henry Clausen & Son Brewing Company and Flannagan, Nay & Company were consolidated and purchased by British capitalists. The capital stock is \$3,000,000, and a 6 per cent. mortgage of \$1,650,000 was placed on the property. The agent through whom the deal was made says 90 per cent. of the capital was furnished by Dublin and Belfast investors. Shortly afterward the John F. Betz & Son Brewery, of Philadelphia, was capitalized, \$1,500,000 of preferred and ordinary stock was issued and \$1,250,000 6 per cent. debentures. This was followed by the consolidation of the Bartholomay, Rochester, and Genesee breweries, in Rochester, and their capitalization at \$3,000,000. The McAvoy, Wacker and Birk breweries of Chicago followed suit with \$5,000,000 capital, and E. W. Voigt's brewery in Detroit at \$800,000. Frank Jones disposed of his Portsmouth, N. H., and Boston breweries to London parties at \$6,300,000. George Rungler's brewery changed hands at \$950,000. The brewery of Christian Trefz, Gottfried Kreuger, and Hauck & Company, of New York, George Hupfel, of New York, and the Albany Brewing Company, of Albany, were consolidated and capitalized for \$5,300,000, the principal purchaser being the banking house of Gibbs & Company, of London. Efforts have been made to secure George Ehret's, Annheuser-Busch, and the Philip Best breweries, fabulous sums having been offered for the plant and good will. The total investments of British capital in breweries at present are more than \$30,000,000.

Q. Have you any knowledge of any of these transactions?—A. Not the least, except what I have seen in the newspapers.

Q. Have you any reason to suppose, outside of what you have seen in the papers, that any of these breweries have been disposed of to English people?—A. Nothing, except as to Flannagan & Company and Clausen & Son. Mr. Clausen told me so, and Mr. Flannagan did.

Q. Where are those breweries?—A. In New York.

Q. New York City?—A. Yes, sir.

Q. That transaction took place before your sale?—A. Yes, sir.

Q. You may state whether the arrangement you made for disposing of your breweries to English people contemplated any further consolidation of American breweries into English hands, or any further consolidation of them in any way?—A. No, sir; it did not.

Q. Has there been any general scheme of consolidation or combination among breweries?—A. Not to my knowledge.

Q. There is none now contemplated?—A. No, sir.

Q. There is no such movement contemplated, to your knowledge?—A. No, sir; not to my knowledge.

Q. Is there any trust or arrangement between the various brewers of the country as to keeping up prices?—A. They have what they call local brewers' associations in the different States. There always has been one in New England. I have set up a price and never have paid any attention to them. I belong to the American Brewers' Association of New England, and have for fifteen years.

Q. Is there any arrangement for keeping up the prices?—A. The same as in any other business. They never do it. They always break.

Q. There is no pool for the division of profits?—A. No, sir.

Q. Is there any other arrangement except as to keeping up prices?—A. I have always believed in paddling our own canoe.

Q. Is there any written combination, or trust, or agreement, or arrangement, existing among the American brewers as to prices?—A. Not to my knowledge. They get together in the different cities. In New York they have what they call the local—I suppose there are a half a dozen in that State. We have one that includes New England.

Q. What agreement is there as to keeping up prices in your New England association?—A. There never has been any. The only object was to inform ourselves as to who paid their bills and who did not. I can not speak for anything outside of New England. We keep what we call a black list.

Q. You do not manufacture what is called lager beer?—A. No, sir.

Q. What is the general description in the trade of your beer?—A. It is ale. The other is beer.

By Senator HALE:

Q. You do not manufacture beer at your place at all?—A. Nothing but ale.

By the CHAIRMAN:

Q. Jones' ale is the trade name of it?—A. Yes, sir, I have been the largest ale brewer in this country for many years.

Q. Did you not make preparations for manufacturing beer?—A. When I built my last malt house they said I was doing so.

Q. To what extent is ale of the same general character that you make manufactured in the United States?—A. There is not another manufactory of this extent in the United States.

Q. What is the difference between the ale that you make and what is commonly known as beer?—A. One is slow fermentation the other is quick. In one the fermentation is from the bottom and in the other the fermentation begins at the top and goes to the bottom. One is put into the ice-house from the time it is brewed until it is put into a man's stomach.

By Senator HALE:

Q. Which is that?—A. That is what is called beer. It is brewed by a different process. It commences at the top and ferments down.

By the CHAIRMAN:

Q. As a manufacturer of ale you may state what is the proportion of ale manufactured in the United States as compared with beer?—A. I should say fifty barrels of beer to one of ale.

Senator HALE. Of lager?

By the CHAIRMAN:

Q. Of lager?—A. Yes, sir.

Senator HALE. Nearly all these establishments manufacture lager beer?

By the CHAIRMAN:

Q. Of the article you manufacture you are the largest manufacturer in the United States?—A. Of ale; yes, sir.

Senator HALE. Mr. Jones will furnish the organization of this company.

The CHAIRMAN. We would like the names of the members of the organization and the same statistics as to the South Boston brewery which you furnished as to the Portsmouth brewery. You can insert them in your testimony.

The WITNESS. I will do so.

By Senator MCPHERSON:

Q. I have been informed from very reliable sources that the parties who come to this country and purchase the brewery enterprises and other large enterprises do it for the purpose of floating them on the other side, and get a commission out of the business; that breweries have been a very enticing investment because of the fact that they paid very large dividends here, as they do in Europe, and that people of small means, the stock being in small certificates, are in the habit of putting their money into these enterprises, and really that there is no combination of capital nor any large capitalists upon the other side who indulge in this kind of investment. Now, what is your idea or experience touching it?—A. The prospectus, so far as my company was concerned, was gotten out. I think they had three days to subscribe. Well, it was over five times subscribed, and the subscriptions were from £1 to £100. A great majority of it was bought in small subscriptions, as I am informed. If you subscribed for £2 you received one or less than one. It is just as you have stated it, Senator. It is taken by persons of small means.

By the CHAIRMAN:

Q. And that is the ownership of the stock to-day?—A. Yes, sir, as I understand it.

Q. So far as you know there is no very large owner of stock abroad?—A. No, sir.

Senator MCPHERSON. Therefore the danger that might naturally be expected to arise from the fact of large, powerful investors controlling these enterprises and making them monopolies is certainly not borne out by the facts, because in reality they are small investors, each having a very small interest.

At 11 o'clock a. m. the committee adjourned.

TREASURY DEPARTMENT,
OFFICE OF INTERNAL REVENUE,
Washington, February 13, 1891.

HON. WILLIAM E. CHANDLER,
Chairman of Committee on Immigration, United States Senate,
Washington, D. C.

SIR: I have the honor to acknowledge receipt of your communication of the 30th ultimo, in which you ask to be furnished with the statistics of revenue collections at the breweries of the Frank Jones Brewing Company, at Portsmouth, N. H., and South Boston, Mass.; also the breweries of Henry Clausen, at New York; and to reply that for the year ended April 30, 1890, the Frank Jones Brewing Company reports the sale of 257,400 barrels of beer at Portsmouth, N. H., and 27,814 barrels at Boston, Mass.

The notices of change in consequence of sale to the English syndicate were dated May 1, 1890.

H. Clausen & Son, New York, reports for the same period 181,921 barrels of beer sold, and the Clausen & Price Brewing Company report 72,927 barrels.

The two breweries of the Frank Jones Brewing Company and that of H. Clausen & Son are controlled by syndicates formed under the laws of Great Britain, but there is nothing to show that the brewery of Clausen & Price Brewing Company is so controlled.

Respectfully yours.

S. Mis. 3—81

G. W. WILSON,
Acting Commissioner.

32 PURCHASE OF AMERICAN INDUSTRIES BY FOREIGN CAPITAL.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., February 20, 1891.

Hon. WILLIAM E. CHANDLER,
United States Senate, Washington, D. C.:

SIR: I have the honor to transmit herewith a letter from the Commissioner of Internal Revenue, dated the 18th instant, giving information called for in your letters to him of the 30th ultimo and the 16th instant, in regard to certain breweries therein named.

Respectfully, yours,

A. R. NETTLETON,
Acting Secretary.

TREASURY DEPARTMENT,
OFFICE OF INTERNAL REVENUE,
Washington, February 18, 1891.

SIR: I am in receipt of a request from the Chairman of the Senate Committee on Immigration, Hon. William E. Chandler, for information as to the statistics of revenue collections at the breweries of John F. Betz & Son, of Philadelphia; Flannagan, Nay & Co., of New York, Bartholomay Brewing Co., of Rochester, N. Y.; McAvoy, Wacker & Bird, of Chicago, Ill., and E. W. Voigt, of Detroit, Mich.

As the information desired is such as it is not customary to give out without the request or assent of the particular tax-payer concerned, I have the honor to transmit herewith the committee's letter for your action, together with a statement of the information desired, which is as follows:

For the year ended April 30, 1890, J. F. Betz & Son (limited) report the sale of 110,547 barrels of beer.

Flannagan, Nay & Co. (the New York Breweries Company, limited) report 142,837 barrels.

Bartholomay Brewing Company reports 179,962 barrels.

The McAvoy Brewing Company reports 108,792 barrels.

The Wacker & Birk Brewing and Malting Company reports 87,827 barrels, and the Voigt Brewing Company (limited) reports 39,075 barrels.

The breweries that are controlled by syndicates formed under the laws of England are the McAvoy Brewing Co., Chicago, Ill., with Charles P. McAvoy as president, No. 232 Calumet ave., Chicago, Ill.; the Wacker & Birk Brewing and Malting Co., Chicago, Ill., with Charles H. Wacker as president, No. 714 N. Park ave., Chicago, Ill.; The Voigt Brewing Co. (limited), Detroit, Mich., with Edward Voigt as managing director, No. 438 Second ave., Detroit, Mich.; and the New York Breweries Company (limited), with William L. Flannagan as resident managing director, No. 453 West Twenty-fifth street, New York, N. Y.

There is nothing to show that the Bartholomay Brewing Company or that of J. F. Betz & Son are so controlled.

Respectfully yours,

JOHN W. MASON,
Commissioner.

Hon. A. B. NETTLETON,
Acting Secretary of the Treasury, Washington, D. C.

PHILADELPHIA, February 16, 1891.

W. E. CHANDLER, Esq.,
Chairman Senate Committee on Immigration, Washington, D. C.:

DEAR SIR: We beg to acknowledge the receipt of your communication of 14th instant.

In reply we have to state that we will furnish you with the information required, so far as we are concerned, on or before 28th instant.

We have the honor to remain, yours truly,

JOHN F. BETZ & SON (limited).
WM. HAY, *Secretary.*

NEW YORK, February 18, 1891.

Hon. WILLIAM E. CHANDLER,
Chairman Senate Committee on Immigration, Washington D. C.:

DEAR SIR: Your letter of the 14th instant, addressed to Messrs. H. Clausen & Son, of New York, has been handed to me as the manager of that brewery. I have no information as to the details of the transaction to which your letter refers, and regret

that I am therefore unable to furnish any information as to the transaction. I would, however, refer you to Mr. Samuel Untermyer, of No. 46 Wall street, who was identified with the business, and from whom you will probably be able to obtain the required information. So far as concerns the extent of the business in question, the places where it is done, and number of men employed in the brewery, I am in possession of the facts, which I take pleasure in herewith appending. If you require any further details bearing upon the question of employes in the brewery, I will gladly furnish the same, but there my knowledge on the subject ends, so I trust that I may therefore be spared the necessity of testifying before your committee.

First. Conducted by a company.

Second. Business in New York, Massachusetts, Connecticut, Pennsylvania, and shipped in bottles all over the world.

Third. Persons employed: Brewery, 130 men—58 in stable, \$15; 14 coopers, \$18; 58 in brewery at \$16.50 per week. At agencies: Newark, N. J., 9 men at \$16; Philadelphia, 25 men at \$12. Bottling Company, New York, 20 men, at \$10; besides this the men in the bottling get commissions on sales.

Fourth. German extraction, 122 men; Irish extraction, 62 men. Their present citizenship I do not know and can only find out by asking each individual. Most of these men have been in our employ a long time. There are about 50 per cent. that have been here nearly 10 years, and from that up to 30 years of service in this company.

Fifth. Extent of industry: Sales 180,000 barrels per year.

I think this covers all the facts asked for within my knowledge.

Yours, faithfully,

WILLIAM J. FLANAGAN.

NEW YORK, February 24, 1891.

Hon. W. E. CHANDLER,

Chairman Senate Committee on Immigration.

DEAR SIR: I beg to acknowledge the receipt of your letter of the 23d instant inclosing a copy of a letter written to Messrs. H. Clausen & Son, of New York City, under date of February 14, bearing upon the pending immigration investigation, pursuant to a concurrent resolution of the United States Senate and House of Representatives.

In the matter of the sale of the property in question, as well as the Frank Jones sale, which has been under investigation, and other like transactions, I feel that I acted to some extent as the counsel for the venders, although I negotiated the business in a certain sense as the agent of the venders. I should not, therefore, feel justified in disclosing the details of these transactions without the assent of my clients in the absence of a ruling on the subject, and I should certainly not feel justified in making the disclosures voluntarily.

The resolution under which the committee is acting so far as applicable to the question of foreign investments contains the following clause:

"And also to investigate the effect on immigration, and incidentally on American workingmen, which is likely to follow the purchase of American industries by foreign capital."

As a director in several of the companies organized with the aid of foreign capital, and as counsel for a number of them, I may say that in no instance has the sale been followed by the slightest change in the working staff of the business or in the employment of additional foreign labor. The policy has always been to continue the business precisely as it had been previously conducted.

I know of no reason why your committee should not be fully informed concerning all the matters about which you inquire, provided such information is within the scope of your inquiry, and I believe that the people interested in the sales would, if called upon, readily acquiesce in furnishing the details of the various transactions; but you will readily appreciate that the privilege which I urge is one for them and not for me to waive or urge.

Very truly, yours,

SAML. UNTERMYER.

S. Mis. 88—3

IN THE SENATE OF THE UNITED STATES.

MARCH 2, 1891.—Reported and ordered to be printed.

Mr. ALLISON, from the Committee of Conference on the disagreeing votes of the two Houses on the amendments of the Senate to the bill H. R. 13462, submitted the following

CONFERENCE REPORT:

The Committee of Conference on the disagreeing votes of the two Houses on the amendments of the Senate to the bill (H. R. 13462) "making appropriations for sundry civil expenses of the Government for the fiscal year ending June 30, 1892, and for other purposes," having met, after full and free conference have agreed to recommend and do recommend to their respective Houses as follows:

That the Senate recede from its amendments numbered 1, 7, 25, 28, 32, 33, 48, 50, 52, 69, 71, 83, 84, 85, 98, 100, 105, 118, 120, 121, 122, 123, 129, 130, 137, 150, 159, 166, 171, 175, 178, 181, 182, 183, 184, 194, 195, 196, 197, 199, 207, and 208.

That the House recede from its disagreement to the amendments of the Senate numbered 2, 5, 6, 8, 9, 10, 11, 12, 13, 15, 16, 17, 18, 20, 21, 22, 24, 26, 27, 29, 30, 31, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 49, 51, 53, 55, 57, 58, 59, 61, 62, 63, 65, 67, 68, 70, 72, 73, 74, 75, 76, 77, 78, 79, 81, 82, 88, 89, 90, 91, 92, 94, 95, 96, 99, 102, 103, 104, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 119, 124, 125, 126, 127, 128, 130½, 131, 132, 133, 134, 135, 136, 138, 139, 140, 141, 142, 143, 144, 145, 147, 148, 154, 155, 156, 157, 160, 162, 163, 167, 168, 169, 173, 174, 176, 177, 179, 180, 185, 186, 187, 188, 189, 190, 191, 192, 193, 198, 200, 201, 204, 205, and 206, and agree to the same.

Amendment numbered 3:

That the House recede from its disagreement to the amendment of the Senate numbered 3, and agree to the same with an amendment, as follows:

Strike out of the amended paragraph the words "under present limit;" and the Senate agree to the same.

Amendment numbered 4:

That the House recede from its disagreement to the amendment of the Senate numbered 4, and agree to the same with an amendment, as follows:

In lieu of the sum appropriated by said amendment insert *three hundred and fifty thousand dollars*; and the Senate agree to the same.

2 CONFERENCE REPORT ON SUNDRY CIVIL APPROPRIATIONS BILL.

Amendment numbered 14:

That the House recede from its disagreement to the amendment of the Senate numbered 14, and agree to the same with an amendment, as follows:

In lieu of the matter inserted by said amendment insert the following: *For post-office at Pueblo, Colorado: For purchase of site and commencement of building, one hundred thousand dollars. The limit of cost of site and the erection of a public building thereon at Pueblo, Colorado, to be three hundred thousand dollars; and the Senate agree to the same.*

Amendment numbered 19:

That the House recede from its disagreement to the amendment of the Senate numbered 19, and agree to the same with an amendment, as follows:

In lieu of the matter inserted by said amendment insert the following: *For the completion of the fourth story and for construction of an elevator in the public building at Leavenworth, Kansas, eight thousand dollars; and the Senate agree to the same.*

Amendment numbered 23:

That the House recede from its disagreement to the amendment of the Senate numbered 23, and agree to the same with an amendment, as follows:

In lieu of the matter inserted by said amendment insert the following: *For post-office at Washington, District of Columbia: That the limit of cost of the Washington City post-office building, exclusive of site, is hereby increased to two million dollars, and the said building shall be constructed so as to be fireproof; and the Senate agree to the same.*

Amendment numbered 54:

That the House recede from its disagreement to the amendment of the Senate numbered 54, and agree to the same with an amendment, as follows:

In lieu of the number proposed insert *one thousand one hundred and seventy-five*; and the Senate agree to the same.

Amendment numbered 56:

That the House recede from its disagreement to the amendment of the Senate numbered 56, and agree to the same with an amendment, as follows:

In lieu of the sum proposed insert *six hundred and forty-five thousand dollars*; and the Senate agree to the same.

Amendment numbered 60:

That the House recede from its disagreement to the amendment of the Senate numbered 60, and agree to the same with an amendment, as follows:

In lieu of the sum proposed insert *two hundred and eighty-three thousand dollars*; and the Senate agree to the same.

Amendment numbered 64:

That the House recede from its disagreement to the amendment of the Senate numbered 64, and agree to the same with an amendment, as follows:

In lieu of the matter inserted by said amendment insert the following: *Also, one at or near Port Orford, on the coast of Oregon; and the Senate agree to the same.*

Amendment numbered 66:

That the House recede from its disagreement to the amendment of the Senate numbered 66, and agree to the same with an amendment, as follows:

Transpose the matter proposed by said amendment to come in after line 14, page 10, of the bill; and the Senate agree to the same.

Amendment numbered 80:

That the House recede from its disagreement to the amendment of the Senate numbered 80, and agree to the same with an amendment, as follows:

In lieu of the sum proposed insert *one hundred and forty-five thousand dollars*; and the Senate agree to the same.

Amendment numbered 86:

That the House recede from its disagreement to the amendment of the Senate numbered 86, and agree to the same with an amendment, as follows:

In lieu of the sum proposed insert *one hundred and fifty-five thousand dollars*; and the Senate agree to the same.

Amendment numbered 87:

That the House recede from its disagreement to the amendment of the Senate numbered 87, and agree to the same with an amendment, as follows:

In lieu of the sum proposed insert *forty-five thousand dollars*; and the Senate agree to the same.

Amendment numbered 93:

That the House recede from its disagreement to the amendment of the Senate numbered 93, and agree to the same with an amendment, as follows:

In lieu of the matter inserted by said amendment insert the following:

FISH HATCHERY IN THE ROCKY MOUNTAIN REGION AND GULF STATES: For investigation respecting the advisability of establishing a fish-hatching station in the Rocky Mountain region in the State of Montana or Wyoming and also a station in the Gulf States, one thousand dollars each; in all two thousand dollars; and the Senate agree to the same.

Amendment numbered 97:

That the House recede from its disagreement to the amendment of the Senate numbered 97, and agree to the same with an amendment, as follows:

In lieu of the matter inserted by said amendment, insert the following: *of which not exceeding five thousand dollars may be expended by the said board for clerical services*; and the Senate agree to the same.

Amendment numbered 101:

That the House recede from its disagreement to the amendment of the Senate numbered 101, and agree to the same with an amendment, as follows:

In lieu of the matter stricken out by said amendment insert the following: *For the World's Columbian Commission, ninety-five thousand five hundred dollars, of which sum thirty-six thousand dollars shall be used for the Board of Lady Managers*; and the Senate agree to the same.

4 CONFERENCE REPORT ON SUNDRY CIVIL APPROPRIATIONS BILL.

Amendment numbered 117:

That the House recede from its disagreement to the amendment of the Senate numbered 117, and agree to the same with an amendment, as follows:

In lieu of the sum proposed insert *six hundred and twenty-five thousand dollars*; and the Senate agree to the same.

Amendment numbered 146:

That the House recede from its disagreement to the amendment of the Senate numbered 146, and agree to the same with an amendment, as follows:

In lieu of the sum proposed insert *two hundred and fifty thousand dollars*; and the Senate agree to the same.

Amendment numbered 149:

That the House recede from its disagreement to the amendment of the Senate numbered 149, and agree to the same with an amendment, as follows:

In lieu of the sum proposed insert *sixty thousand dollars*; and the Senate agree to the same.

Amendment numbered 151:

That the House recede from its disagreement to the amendment of the Senate numbered 151, and agree to the same with an amendment, as follows:

In lieu of the sum proposed insert *five hundred and ninety-six thousand four hundred dollars*; and the Senate agree to the same.

Amendment numbered 152:

That the House recede from its disagreement to the amendment of the Senate numbered 152, and agree to the same with an amendment, as follows:

In lieu of the sum proposed insert the following: *Fifty thousand five hundred dollars, three thousand dollars of which to be expended in the employment of instructors of articulation*; and the Senate agree to the same.

Amendment numbered 153:

That the House recede from its disagreement to the amendment of the Senate numbered 153, and agree to the same with an amendment, as follows:

In lieu of the sum proposed insert *twenty-four thousand three hundred dollars*; and the Senate agree to the same.

Amendment numbered 158:

That the House recede from its disagreement to the amendment of the Senate numbered 158, and agree to the same with an amendment, as follows:

In lieu of the sum proposed insert *twelve thousand five hundred dollars*; and the Senate agree to the same.

Amendment numbered 161:

That the House recede from its disagreement to the amendment of the Senate numbered 161, and agree to the same with an amendment, as follows:

In lieu of the matter stricken out by said amendment insert the following:

WATERVLIET ARSENAL, WEST TROY, NEW YORK: For paving roads in Arsenal grounds with granite blocks, five thousand dollars; and the Senate agree to the same.

Amendment numbered 164:

That the House recede from its disagreement to the amendment of the Senate numbered 164, and agree to the same with an amendment, as follows:

In lieu of the sum named in the amended paragraph insert *forty-five thousand dollars*; and the Senate agree to the same.

Amendment numbered 165:

That the House recede from its disagreement to the amendment of the Senate numbered 165, and agree to the same with an amendment, as follows:

In lieu of the matter inserted by said amendment insert the following: *For granite curbing about Lafayette Square, five thousand dollars*; and the Senate agree to the same.

Amendment numbered 170:

That the House recede from its disagreement to the amendment of the Senate numbered 170, and agree to the same with an amendment, as follows:

In lieu of the sum proposed insert *seven hundred and forty-five thousand dollars*; and the Senate agree to the same.

Amendment numbered 172:

That the House recede from its disagreement to the amendment of the Senate numbered 172, and agree to the same with an amendment, as follows:

After the word "war," in the matter inserted by said amendment, insert the words *in his discretion*; and the Senate agree to the same.

Amendment numbered 202:

That the House recede from its disagreement to the amendment of the Senate numbered 202, and agree to the same with an amendment, as follows:

In lieu of the sum proposed insert *two million three hundred and forty-five thousand five hundred dollars*; and the Senate agree to the same.

Amendment numbered 203.

That the House recede from its disagreement to the amendment of the Senate numbered 203, and agree to the same with an amendment, as follows:

In lieu of the sum proposed insert *one million and ninety-nine thousand dollars*; and the Senate agree to the same.

W. B. ALLISON,
EUGENE HALE,
A. P. GORMAN,

Managers on the part of the Senate.

J. G. CANNON,
WM. COGSWELL,
JOSEPH D. SAYERS,

Managers on the part of the House.

It is a well-known fact that the American Medical Association has been the leading organization in the United States for the promotion of the interests of the medical profession. It has been the champion of the cause of the physician, and has been the voice of the medical profession in the halls of Congress and in the courts of the land.

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51ST CONGRESS, }
2d Session. }

SENATE.

{ MIS. Doc.
{ No. 90.

ANNUAL REPORT

OF THE

LIBRARIAN OF CONGRESS,

EXHIBITING

THE PROGRESS OF THE LIBRARY

DURING THE

CALENDAR YEAR 1890.

MARCH 2, 1891.—Presented by Mr. EVARTS and ordered to be printed.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1891.

1891

LIBRARY

U.S. DEPT. OF AGRICULTURE

ANNUAL REPORT

OF THE

LIBRARY OF CONGRESS

WASHINGTON

THE PROGRESS OF THE LIBRARY

AND

CALENDAR YEAR 1890

Report of the Librarian, J. M. Smith, for the year ending June 30, 1891.

WASHINGTON:
GOVERNMENT PRINTING OFFICE:
1891.

ANNUAL REPORT

OF THE

LIBRARIAN OF CONGRESS.

LIBRARY OF CONGRESS,
Washington, February 28, 1891.

The undersigned presents herewith the annual statement of the condition and progress of the Library and the statistics of the copyright business in his charge for the calendar year 1890, closing December 31, 1890.

The enumeration of the books has become more difficult with each year's growth of the collections. The great portion of the Library now unprovided with shelf room renders the embarrassment of producing books with promptitude extreme, and the counting of piles collected on the floors of the Library and outlying rooms must of necessity yield an approximate rather than an accurate result. The aggregate reported by the enumerators is 648,928 volumes of books, bound and unbound, besides about 207,000 pamphlets. The last enumeration (on January 1, 1890) footed up 633,717 volumes and 206,000 pamphlets. The accessions of the year have been 15,211 volumes, which came from the various sources named below:

From purchase	3,721
From copyright	9,465
From deposit by the Smithsonian Institution	1,223
From additions to the Toner collection	155
From donations	380
From exchanges	267
Total.....	15,211

In the department of copyrights there has been an increase of 1,809 entries in the office of the Librarian over the preceding year 1889. The aggregate number of copyrights entered from January 1 to December 31, 1890, inclusive, was 42,794, of all classes of publications. The aggregate fees received and paid into the Treasury during the year was \$33,721.25, being \$635.87 more than in the year preceding.

The various designations under which the entries of copyright have been made are enumerated as follows:

Number of articles entered in 1890.

Books	16,456
Periodicals.....	8,164
Musical compositions.....	9,132
Dramatic compositions	715
Photographs	2,387
Engravings and chromos	1,940
Prints and cuts	821
Designs.....	715
Drawings	70
Paintings	281
Maps and charts	2,113
Total	42,794

The deposits of copies of publications in the Library, under each head, exhibits the following aggregate:

Number of copyright articles received in 1890.

Books (including all printed matter so designated).....	22,346
Periodicals	12,490
Musical compositions	16,201
Dramatic compositions	283
Photographs.....	5,380
Engravings and chromos.....	4,649
Prints and cuts	632
Designs and drawings.....	269
Paintings.....	85
Maps and charts	2,533
Total.....	64,868

Inasmuch as the copyright law requires two copies to be deposited in this office of each publication secured by entry of title, the net additions to the Library collections for the year from this source were, approximately, 32,434 different articles. In the class of entries designated as "books," however, were many form books, pamphlets, circulars, etc., not properly reckoned as additions to Library books, reducing the net accessions to the latter from copyright deposits to 9,465 volumes.

The balances to the credit of various Library funds were as follows January 1, 1891:

Fund for increase of the Library	\$8,293.60
Fund for contingent expenses of Library.....	826.69
Fund for printing and binding.....	11,341.60
Fund for printing unpublished historical documents relating to early French discoveries in America.....	1,953.44

THE TONER LIBRARY.

The collection of books presented to the Government by Dr. J. M. Toner has been increased by the addition of 155 volumes of books and 315 pamphlets during the year. Very extensive additions have also been made by the donor to his already large collection of biographical material, excerpted from newspaper and other printed sources, and arranged in the Library in alphabetical order for ready reference.

The undersigned again solicits the attention of the committee to the need of additional clerical help in the copyright office. The work of the Library proper in the catalogue department has from necessity been sacrificed to the pressing demands of the copyright business upon the time of the Librarian and his assistants, to avoid any accumulation of arrears. Several more competent assistants are required in the interest of a proper public service in the administration of the Library in its diversified work.

The progress made during the year in the new Library Building has been gratifying, and is fully set forth in the annual report of the Chief of Engineers, charged with the prosecution of the work. Substantial prospect of relief from the ever-growing difficulties which beset the administration of an overcrowded Library is now not remote.

AINSWORTH R. SPOFFORD,
Librarian of Congress.

Hon. WM. M. EVARTS,
Chairman of the Joint Committee on the Library.



The collection of books presented to the Government by the Library of Congress during the year 1901 was not so large as in the preceding year. This was due to the fact that the Library had been unable to acquire a number of the books which it had been promised. The total number of books received was 1,234, of which 1,000 were purchased and 234 were presented to the Library.

The books received during the year 1901 were distributed to the various departments of the Library. The Department of Manuscripts received 1,000 books, the Department of Printed Books received 1,000 books, and the Department of Maps received 234 books. The total number of books distributed was 1,234, which is the same as the total number of books received.

The Department of Manuscripts has received during the year 1901 a number of valuable manuscripts. These include a number of manuscripts of the works of Shakespeare, a number of manuscripts of the works of Milton, and a number of manuscripts of the works of Dryden.

The Department of Printed Books has received during the year 1901 a number of valuable printed books. These include a number of printed books of the works of Shakespeare, a number of printed books of the works of Milton, and a number of printed books of the works of Dryden.

The Department of Maps has received during the year 1901 a number of valuable maps. These include a number of maps of the United States, a number of maps of the world, and a number of maps of the various countries of the world.

The total number of books received during the year 1901 was 1,234, which is the same as the total number of books received during the year 1900.

The total number of books distributed during the year 1901 was 1,234, which is the same as the total number of books distributed during the year 1900.

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POSTAL SAVINGS BANKS.

AN ARGUMENT IN THEIR FAVOR

BY

THE POSTMASTER-GENERAL,

WITH

APPENDICES:

1. DRAFT OF BILL TO ESTABLISH POSTAL SAVINGS BANKS AND ENCOURAGE SMALL SAVINGS.
2. INTERESTING DETAILS OF POSTAL SAVINGS BANK SYSTEMS IN FOREIGN COUNTRIES.
3. OPINIONS OF FORMER POSTMASTERS-GENERAL.
4. SUMMARY OF THE EFFORTS TO PROVIDE LEGISLATION ON THE SUBJECT OF POSTAL SAVINGS BANKS.
5. RESOLUTION OF THE UNITED STATES SENATE TO INQUIRE AS TO THE FEASIBILITY AND ADVISABILITY OF ENACTMENT OF LAW CREATING POSTAL SAVINGS BANKS.
6. SENTIMENT OF THE PUBLIC PRESS.

FEBRUARY 2, 1891.—Presented by Mr. MITCHELL, referred to the Committee on Post-Offices and Post-Roads, and ordered to be printed.

WASHINGTON:

GOVERNMENT PRINTING OFFICE.

1891.

POSTAL SAVINGS BANKS.

AN ARGUMENT IN THEIR FAVOR BY THE POSTMASTER-GENERAL.

OFFICE OF THE POSTMASTER-GENERAL,
Washington, D. C., February 26, 1891.

DEAR SIR: Referring to your letter of December 17, asking for information in relation to postal savings banks, with such facts or statistics as I could obtain, I beg to lay before you my views on this subject, with certain details of the postal savings systems in Sweden, Great Britain, Austria, Belgium, the Netherlands, France, Russia, and Italy, and also the opinions of some of my predecessors in this office, and a summary of the legislation that has been attempted from 1873 up to the present time.

I have also added, as a suggestion to you and your committee, a bill which I think covers my views as to the legislation needed. The resolution of the Senate which calls out this paper is also returned herewith.

PUBLIC SENTIMENT FAVORS POSTAL SAVINGS BANKS.

Savings banks are the outgrowth of a popular desire for more numerous safe places for the deposit of money, where it will add to itself interest instead of lying idle and useless. The public sentiment of our day, as voiced through the press, is almost unanimous in advocating the institution of savings banks under the encouragement of the Government. Charitable institutions of various sorts are united in pressing upon the public attention and upon legislators the need of such banks. Financiers who have sought for channels of benevolence have established various private affairs for the savings of the working people.

There is unanimity among all conditions in favor of this beneficent plan, whereby the faith of all the people is pledged in financial transactions to the security of the individual. These efforts have found various outlets. One started in a committee on the elevation of the poor in their homes, a committee of the State Charities Aid Association of the State of New York, and the chief motive which influenced that committee was the avowed need of some form of depository which would be protected against loss by an unquestionable guaranty.

This movement is entitled to more than passing notice because it is averred that it is based upon a widespread knowledge of the actual wants of the working masses derived from personal intercourse with them. In our day and in our country the poor man and the workingman (there are comparatively few very poor and most of our people are workers) need no patronizing. They do not want to be helped so much

as to be shown how to help themselves, or, rather, to be more limited, to be afforded proper modes of helping themselves. They do not need charity or Government aid or paternalism; all that they ask for is absolute security and convenient places of deposit.

The inculcation of the habit of saving leads to better citizenship. Every depositor in a Government bank has, so to speak, a stake in the country; he is therefore against disorder and anarchy and our institutions are safer. His family is better provided for. The doctrine has been recorded in previous discussions upon this subject, that whatever can be as well done by private enterprise as by the Government should never be entered upon by the latter, and the committee of Congress at that time having the matter in charge expressly disclaimed any purpose of superseding or interfering with sound institutions then or thereafter organized by private enterprise. The opinion was strongly expressed, however, that private enterprise alone does not and can not in this respect meet the necessities of the industrious in any country, and least of all the United States.

The prime requisite to induce methodical saving is the privilege of depositing very small sums, and no less important, as has been stated, is the guaranty of undoubted security. The inducement to hold out the former is lacking to individuals or corporations, who, for the sake of larger gains, resort to broader fields for their enterprise. As for the latter, none but the Government can fully give it. While the conditions are not precisely the same, it will be useful to look to the experience of other countries in this regard and to observe what success these depositories under the care of the Government have met with.

THE EXPERIENCE OF OTHER COUNTRIES—GREAT BRITAIN.

The discussion began in Great Britain as early as in 1807 and was continued by philanthropists in Parliament for 54 years against bitter opposition until 1861 from parties supposed to be interested in private savings banks. On May 17 of that year an act was passed entitled "An act to grant additional facilities for depositing small savings at interest, with the security of the Government for the due repayment thereof."

It is noteworthy that after the lapse of 15 years the private savings banks had increased their capital by more than \$10,000,000, which was the best answer to those who had opposed the scheme on the ground that they would ruin private savings banks. The fact that they have met the anticipations of their founders and have proved beneficial even beyond expectations, is best shown by the statistics of the latest report of the British postmaster-general, that for the year ended March 31, 1890, wherein it appears that the number of post-office savings banks is 9,353, the total amount standing to the credit of depositors is £62,999,620 (at \$4.87 to the pound, equivalent to \$306,808,149), and that in England and Wales the number of accounts was 1 to every 7 of population; in Scotland 1 to every 25, and in Ireland 1 to every 25, an average in the whole United Kingdom of 1 depositor to every 8 inhabitants, with an average balance to the credit of each depositor of nearly £14 (\$68.18). The increase in the amount to the credit of depositors for the single year ending December 31, 1889, was nearly £4,500,000 (\$21,915,000), and the interest credited to them that one year was nearly £1,500,000 (\$7,305,000).

There were as high as 55,000 depositors in a single day, while the greatest number of withdrawals in a single day was 18,499.

CANADA.

In 1867 there were in two of the provinces of Canada regularly organized savings banks, with deposits amounting to \$3,489,000. In that year a proposition was introduced in the Canadian legislature to establish post-office savings banks, popular attention having been attracted by the success of the British post-office banks. The measure received but little attention, and was the subject of but little comment and no hostile criticism.

It is stated that the discussion was confined to fixing the limit to the maximum deposits of a single person, the object being twofold: first, to exclude from the benefits of the Government banks any but the wage-earners; and, second, to protect the Canadian chartered banks. There was the fear, which has been apparent in the history of the subject in other countries, that deposits in private institutions would seek the post-office banks; but after 16 years experience the comptroller of the Canadian system stated that the banking institutions of Canada were satisfied that they had nothing to fear in this respect from the post-office savings banks. The system went into effect in Canada on the 1st of April, 1868, at 81 offices, the deposits amounting for the year ending June 30, 1869, to \$856,814.20. For the year ended June 30, 1889, the number of depositors was 113,123, and the aggregate amount to the credit of depositors, \$22,413,123.

An interesting inquiry made in Canada in 1885 disclosed the fact that those most largely interested in the postal savings banks were farmers, whose deposits comprised over one-third of the whole; that the deposits of married women were the next most numerous, being nearly one-fifth of the whole. Next to these in order came mechanics, single women, laborers, widows, clerks, and tradesmen, while professional men are near the foot of the list.

FRANCE.

The establishment of the postal savings banks in France was authorized in 1881, and on the 31st of December, 1888, the number of open accounts was 1,129,984, and the amount to the credit of the depositors \$51,490,200.

AUSTRIA.

On the 31st of December, 1889, the number of depositors in Austria was 719,431 and the amount of deposits \$8,511,250, while in Hungary the depositors numbered on December 31, 1888, 129,887, with accounts to their credit aggregating \$1,412,685. At the close of the same year in Belgium there were 593,979 depositors, with an aggregate balance of \$48,699,644; and the astonishing statement is added that in this country the number of depositors trebled in 8 years and the amount of deposits doubled in the same period.

THE NETHERLANDS.

The Netherlands had \$5,666,260 to the credit of 201,763 depositors, and Sweden held \$746,502 to the credit of 152,016 depositors, 59 per centum of whom were minors. The postal savings banks were sanctioned recently in Russia; and Germany, it is believed, is now the only one of the great powers of Europe which does not possess this system.

AUSTRALASIAN COLONIES.

The Australasian colonies have followed in the footsteps of the mother country, and south Australia has 64,320 depositors, with credits amounting to \$9,234,722; Queensland, 43,003 depositors, with \$7,849,836; New Zealand, 84,488 depositors, with balances amounting to \$9,975,907.

OTHER COUNTRIES.

Even the Cape of Good Hope has 15,505 patrons of this system, who possess in the aggregate credits amounting to \$1,562,437. British Guiana has 136 depositors with \$2,279 to their credit, and the British comptroller of savings banks states that some of the deposits bear evident traces of having been unearthed in the literal sense of the word, proving the need which some thrifty persons had experienced of a safe place of deposit. In Ceylon the system was established as late as 1885, yet in 1887 there were 144 offices, with 6,685 depositors, and deposits amounting to 129,175 rupees. The system is stated to have proved a boon to the less prosperous population, the most gratifying feature being that the best customers are the Singhalese.

To come nearer home there is a post-office savings bank in the Hawaiian Kingdom, which was inaugurated June 1, 1886, and in 3 years the depositors numbered 2,641 and the deposits amounted to \$885,960. The funds are employed on public improvements.

For convenience of reference a table is here given, showing the condition of postal savings banks in the principal European countries at the beginning of the year 1889:

Names of countries and year of the establishment of the postal savings banks.	Number of depositors on the 31st December, 1888.	Deposits.			Repayments.		
		Number.	Aggregate amount.	Average amount.	Number.	Aggregate amount.	Average amount.
Austria (1883):							
Saving	655,335	1,147,917	\$7,728,058.14	\$6.75	356,184	\$6,625,402.43	\$18.20
Checks	14,296	4,281,780	310,765,131.79	72.58	1,238,144	310,111,655.40	2.51
Belgium (1869)	392,316	831,489	11,766,469.65	14.15	203,530	8,310,548.93	40.83
Canada (1868)	108,409	160,085	8,078,245.25	50.50	83,081	7,830,114.22	94.25
France (1882), including Algeria and Tunis	1,129,984	1,455,780	32,677,370.98	22.44	536,665	25,710,535.92	47.91
Hungary (February 1, 1886)	129,887	431,108	1,734,729.25	4.02	118,654	1,355,229.98	11.42
Italy (1876)	1,710,943	2,040,927	33,313,152.35	16.32	1,162,234	30,160,891.74	29.95
Netherlands (1881)	201,763	445,799	3,762,317.61	8.48	131,969	2,745,164.84	20.67
United Kingdom (1861)	4,220,927	7,540,625	92,662,606.33	12.28	2,633,808	76,858,181.95	29.18
Sweden	174,327	212,206	877,875.36	4.22	41,191	418,863.46	10.17

SUMMARY.

Names of countries and year of the establishment of the postal savings banks.	Aggregate amount of the sums due the depositors.	Average due each depositor.	Number of depositors per 1,000 inhabitants.	Aggregate of the sums due per 1,000 inhabitants.
Austria (1883):				
Saving	\$7,236,419.20	\$11.04	29	\$327.55
Checks	136,472,448.09	954.63	0.64	616.15
Belgium (1869)	27,491,933.83	70.07	65	4,559.16
Canada (1868)	22,581,626.67	208.44	23	4,599.09
France (1882), including Algeria and Tunis	51,490,200.19	44.66	25.70	1,174.60
Hungary (February 1, 1886)	1,412,685.30	10.88	7.80	85.61
Italy (1876)	49,516,486.07	28.94	60	1,739.76
Netherlands (1881)	5,666,260.56	27.98	47.20	895.73
United Kingdom (1861)	284,794,877.70	77.47	111	7,488.01
Sweden	1,301,306.94	7.46	37	275.03

PRIVATE SAVINGS BANKS DO NOT MEET ALL THE WANTS OF THE PEOPLE.

1.—THEY DO NOT AFFORD ADEQUATE PROTECTION.

It is not hard to show that private institutions do not meet all the wants of all the people. In the first place they do not afford adequate protection to many who are not able to protect themselves. In the second place they are not open enough of the time, nor at the most convenient hours for working people, nor for long-continued periods; they are not situated at all the convenient points; in a word, they are not sufficiently adapted to the convenience of our population, nor have they either the incentive of philanthropy or of gain to induce them to become sufficiently so.

Recently in the prosecution of this matter, which had concerned me for some time prior to the introduction in your body of the resolution to which this aims to be an answer, I had undertaken an inquiry for the purpose of ascertaining in what manner and to what extent private banks and savings institutions were authorized, restricted, or controlled by legislation in the various States of the Union. To this end I caused inquiries to be addressed to the governors of the various States, and here make acknowledgment of the uniform courtesy of these officers, in responding with the fullest information at their command. My purpose here is to sift the replies received and give only the gist of such as have direct bearing upon the question of the security afforded by such private concerns throughout the various States, to the savings or investment deposits of our people. I shall make the summary in as few words as possible, giving merely the substance of the answer received by the Post-Office Department, to wit:

INADEQUATE STATE LAWS.

South Carolina.—The banks in the State are governed by the terms of their charter alone.

Maryland.—The laws are very meager on the subject. The affairs of the concern to be examined annually by a committee appointed by the directors, and report published, and the bank subject to examination by the State treasurer at any time.

Minnesota.—There are no laws directly relating to private banks, the attempted legislation of 1887 in regard to such banks having failed to become laws for lack of the constitutional majority in the legislature.

Nevada.—We have no officer that has anything to do with banks to refer the matter to. (Meaning my inquiry.)

Mississippi.—The private or savings banks may be conducted by individuals or may be incorporated under the general laws of the State. There is no restriction as to capital or ownership of property.

Kentucky.—We have no general banking law, but all bank charters are granted by the legislature, with their especial privileges, an evil which we trust will be remedied by the constitutional convention now in session in this city (Frankfort).

Michigan.—There is no law governing private banks in this State.

South Dakota.—We have no banking law. Banks like all other corporations are allowed under our general incorporation laws, and they are not subject to any limitation other than would apply to any moneyed corporation. Banks may also be operated without incorporating. The latter are not under any State supervision. The former are subject to supervision as follows. (Here follows a statement as to the public examiner being authorized to visit each corporation once a year and

ascertain its condition.) The examiner has but little power under the law, yet the examination and publication of the annual reports has a wholesome effect upon the banks. (Here follow certain provisions of the criminal code, restrictive of the operations of the banks.)

Oregon.—Private banks may be incorporated under the general laws of the State, but there is no legislation whatever especially regulating the affairs of such banks or authorizing any officer to inquire into their condition. The only exception to this statement is the power of the assessors to make the usual inquiry respecting taxable property.

Texas.—The creation of corporations for banking purposes is inhibited by the constitution of this State. We have no statutes relating to private banks.

Kansas.—Private banks are not controlled or restricted by the legislation of this State. Savings banks are controlled by legislation only so far as to compel them to obtain a charter, file a certificate of incorporation, giving name and amount of the stock of each shareholder, and make sworn semiannual statements of their financial condition. The business affairs of a savings bank in this State are controlled entirely by its board of directors.

FAILURES OF PRIVATE BANKS.

That many private banking institutions do not afford adequate security to depositors is most clearly demonstrated by the statistics at the command of the Government, showing the failure of private banking firms and contrasting these failures in their extent and effect with the losses incurred through the insolvency of national banks. These statistics are comparatively limited, but such as they are they constitute such strong proof of mismanagement and recklessness of concerns free from adequate governmental or State restraint as to furnish the best evidence upon the point desired in this discussion to be emphasized.

From the beginning of the national banking system until 1879, a period of 16 years, only 81 national banks had become insolvent, and the estimated losses all told were \$6,240,189. It is stated in the publications on the subject that 55 banks operating under systems in vogue prior to the national banking system, failed in the single year 1841, with an aggregate capital of over \$67,000,000. And it is also recorded that in nearly every instance the entire capital of the banks which failed was lost. The losses incident to three or four failures of private banking firms prior to 1879 were equal to the total losses which had up to that time occurred under the national system. During 3 years ending January 1, 1879, the failures of State and savings banks and private banks in 23 States numbered 210, with losses amounting to \$32,616,661.

The average annual losses to creditors by the insolvency of national banks during 16 years prior to 1879 was \$390,012, while that occasioned by the failure of banks other than national was for 3 years prior to 1879 not less than \$10,872,220 per annum. The report of the Comptroller of the Currency for 1879 shows that in the States of Ohio and Illinois alone the losses in 3 years through the failure of State, savings, and private banks and bankers aggregated over \$8,000,000, of which about \$2,000,000 were in Ohio and about \$6,000,000 in Illinois, the total losses in these two States being greater by \$1,798,913 than the total losses to creditors by all the national bank failures which have ever occurred.

In 8 years the losses to creditors through the failures of national banks in the cities of New York and Brooklyn were \$91,000, while the

losses by savings banks in the same two cities for a corresponding period were nearly \$4,500,000.

The Treasury Department has received reports of the condition of 860 savings banks in thirty-five States and Territories, and the results approximately cover the whole field. Of the 860 savings banks, 235 are stock associations, with deposits of \$192,635,519. The remaining 625 are mutual savings associations having deposits aggregating \$1,268,309,742. There are also unofficial reports from 61 savings banks in a number of States and Territories where no provision is made for securing reports or for examination of banks organized under their authority and the deposits in them are stated to be \$89,078,695.

2.—SAVINGS BANKS NOT NUMEROUS IN MANY PARTS OF THE COUNTRY.

Six hundred and thirty-seven of the 921 savings banks are purely mutual; the other 284 are stock savings banks. It is easy to understand why private savings banks do not meet the whole public need in another respect, when it is stated that of the 637 mutual savings banks, all but 11 are located in the New England States, and in New York, New Jersey, Pennsylvania, Delaware, Maryland, and the District of Columbia. These 11 are distributed as follows: In Ohio, 4; in Indiana, 5; in Wisconsin, 1; and in West Virginia, 1. The aggregate deposits of the mutual savings banks amount to \$1,336,001,150, and the average rate of interest paid to depositors is about 3.8 per cent.

The savings deposits in the 284 stock savings banks amount to \$188,843,356. Two hundred and nineteen of these banks are in the Western States and Territories, 11 in Vermont, 7 in Maryland, 4 in Pennsylvania, and the few remaining, only 43 in all, are distributed as follows: 4 in North Carolina, 12 in Georgia, 1 in Louisiana, 1 in West Virginia, 13 in South Carolina, 2 in Florida, and 10 in Tennessee.

The following table, the figures in which are taken from the last report of the Comptroller of the Currency, is a comprehensive statement of the more interesting items in regard to private savings banks:

States.	Number of banks.	Savings deposits.	Number of depositors.	Average deposit.
<i>Mutual savings banks, official.</i>				
Maine	55	\$43,977,085	132,192	\$332.68
New Hampshire	72	65,727,019	159,782	411.35
Vermont	20	14,757,287	51,398	287.12
Massachusetts	177	332,723,688	1,029,694	323.13
Rhode Island	38	60,479,707	127,898	472.88
Connecticut	86	110,370,962	294,896	374.27
New York	124	550,066,657	1,420,997	387.10
New Jersey	26	30,946,878	117,853	262.58
Maryland	16	35,603,591	121,975	291.89
District of Columbia	1	1,303,717	12,534	104.01
Ohio	4	19,207,004	47,294	406.10
Indiana	5	3,078,608	13,062	235.69
Wisconsin	1	67,539	615	109.81
Total	625	1,268,309,742	3,530,190	.....
<i>Mutual savings banks, unofficial.</i>				
Pennsylvania	9	63,957,341	216,757	295.06
Delaware	2	3,603,531	16,000	225.22
West Virginia	1	130,536	2,371	55.06
Total	12	67,691,408	235,128	.....

States.	Number of banks.	Savings deposits.	Number of depositors.	Average deposit.
<i>Stock savings banks, official.</i>				
Vermont.....	11	4, 573, 277	14, 361	318. 45
Maryland.....	7	320, 520	1, 839	174. 29
North Carolina.....	4	209, 363	4, 043	51. 78
Georgia.....	12	2, 637, 648	43, 876	60. 12
Louisiana.....	1	1, 182, 482	3, 421	345. 65
Illinois.....	15	11, 193, 401	42, 170	265. 43
Michigan.....	67	27, 237, 582	124, 664	218. 49
Iowa.....	59	16, 336, 787	44, 838	361. 35
Minnesota.....	8	5, 845, 209	21, 017	278. 12
California.....	37	98, 442, 007	124, 967	787. 74
New Mexico.....	1	109, 407	418	261. 74
Utah.....	7	1, 512, 580	9, 881	153. 08
Washington.....	6	523, 129	5, 634	92. 85
Total.....	235	170, 123, 392	401, 129	.....
<i>Stock savings banks, unofficial.</i>				
Pennsylvania.....	4	\$1, 625, 602	4, 856	\$334. 76
West Virginia.....	1	169, 692	3, 859	44. 00
South Carolina.....	13	3, 274, 440	21, 855	149. 82
Florida.....	2	85, 462	467	183. 00
Tennessee.....	10	1, 650, 940	13, 577	121. 60
Ohio.....	10	8, 936, 259	26, 041	343. 16
Montana.....	1	344, 599	3, 233	106. 59
Nebraska.....	8	2, 632, 970	18, 558	141. 19
Total.....	49	18, 719, 964	92, 446	.....
Grand total.....	921	1, 524, 844, 506	4, 258, 893	358. 04

STRONG ADVOCACY IN THE PAST.

The question of postal savings banks has been advocated in Congress ever since the first forceful discussion in Postmaster-General Creswell's Reports of 1871, 1872, and 1873, for in the latter year Mr. Maynard, of Tennessee, then a member of the House of Representatives, afterwards Postmaster-General, introduced a carefully drawn bill to establish and maintain a national savings depository as a branch of the Post-Office Department. This was followed at short intervals by other bills in both the House and the Senate, in the years 1877, 1878, 1881, 1882, and 1886, all substantially drafted upon the same models and all having the same object in view.

A summary of these bills is printed in the appendix, together with extracts from a report on the subject heretofore made by a Congressional committee, to wit, that of Mr. Lacey, from the Committee on the Post-Office and Post-Roads, of the House, February 21, 1882. This report is of peculiar interest in this connection and at this time, in view of the circumstance that Mr. Lacey is now the Comptroller of the Currency, and that his views, as one of the chief financial officers of the Government, are entitled to the most serious consideration.

THE PRESS FAVORS POSTAL SAVINGS BANKS.

Added to all this, from an executive and legislative standpoint, there is the universal sentiment of the public press of the country seeking continually at the hands of the Government the establishment of these institutions as an incentive to thrift and a remedy for the ills of extravagance. There are scarcely two sides to the question, from their standpoint, as will be seen by reference to the appendix, where are set out the editorial utterances of the leading newspapers of the country.

THE OBSTACLES HERETOFORE.

It may be wondered, with all this array of advocacy uniformly and strongly in favor of the establishment of postal savings banks as a branch of the Post-Office Department, why the measure seemed never to make substantial headway. I have studied the question with much care, and the reason seems to be plain. There has come before legislators, at each periodical discussion of the subject, a mountain of obstacle in the way of providing for the disposal of the sums received from depositors. That they would be enormous in amount can not be doubted. Great Britain, with its population of 35,241,482, already has over \$300,000,000 in its postal savings banks. The United States, with almost double the population and with greater possibilities afforded to its thrifty artisans to accumulate small savings, would with scarce a doubt be confronted with the problem how best to take care of a much larger sum than \$300,000,000 and possibly as much as \$500,000,000. If it were but a question of housing this money in vaults, so that it would be safe from burglary, fire, or casualty of other description, the matter of security could be simply enough solved, but it would be against public policy to withdraw from circulation and lock up in the Treasury vaults such an enormous sum of money.

What must be done is to make this money earn interest, so that it may pay the running expenses of a savings-bank system, and at least a small rate of interest to depositors. This point was commented upon in one of the pamphlets issued by the State Charities Aid Association of the State of New York, in 1887, which proposed a measure providing that no interest should be promised upon the money deposited, and they state that nothing more is asked for by the laboring masses themselves than a safe place in which they may put their small savings. Said they:

The request is made simply for opportunity to deposit their savings in the Treasury of the United States, either with or without interest as the public finances may justify.

And they pathetically add:

Strange as it may seem, there are men to-day in Congress who would deny even this little boon asked for, for use of the United States Treasury vaults for the safe-keeping of the earnings of the poor.

They even attempted to meet the objection as to the withdrawal from circulation of the sum of the deposits, by saying that—

No man of sense will long allow \$200 or \$300 to lie idle where it is drawing no interest; that the money is as much withdrawn from circulation now as it would be then, for it is stored in old stockings and bureau drawers, the difference being that it is now exposed to theft.

This scarcely goes to the merit of the question. It is doubtful whether the United States could successfully deviate from the practice of other countries, which uniformly pay a rate of interest, whether it be large or small. The United States must, therefore, before it can receive these sums from depositors, have a certain prospective use for the money. Can that use be found? Herein lies the whole problem of the post-office savings banks, and herein also lies the main obstacle which heretofore has successfully prevented their establishment.

European countries are not confronted with this problem. They have their varying indebtednesses not likely to be materially reduced, perhaps for centuries, possibly in some cases guaranteed to be permanent indebtednesses. It is not so with us. The policy of the Government since the creation of its tremendous war debt has been to pay off its obligations as rapidly as its revenues would permit.

WHAT SHALL BE DONE WITH THE MONEY IN THE ABSENCE OF A PERMANENT NATIONAL DEBT.

There is little or no sentiment at this day which would support the creation of a permanent indebtedness even for a sentimental object which would result in lasting good to the great body of the people. It has thus been brought about that the debt incident to the prosecution of the war of the rebellion, which reached its maximum on August 31, 1865, and amounted at that date to \$2,844,649,626, or, leaving out the non-interest-bearing obligations, to \$2,383,033,315, has been discharged until to-day it amounts to less than \$700,000,000. This debt is composed of \$64,000,000 of 4½ per cent. bonds, \$568,000,000 of 4 per cent. bonds, and \$64,000,000 of 6 per cent. bonds, the latter being known as Pacific Railroad bonds. The 4½ per cent. bonds mature during the current year. The Pacific bonds mature from 1895 to 1899. The remainder, which constitutes the great bulk of the interest-bearing debt of the United States at this time, absolutely and wholly matures in 1907, or within 17 years.

It is therefore a serious matter to think of receiving perhaps \$500,000,000 from depositors in the postal savings banks, with the prospect of the entire extinguishment of the National debt within that brief period, and the consequent total want of interest-bearing securities guarantied upon the faith and credit of the Government, in which to invest such moneys. There seems to be but one view upon the question of the extinguishment of the National debt.

The Comptroller of the Currency says in 1889 :

The rapid extinguishment of our National debt which has taken place since the close of the late war has given the United States greater influence in its intercourse with other nations than any exhibition of strength which could have been made in the way of organizing armies, building navies, or constructing coast defenses.

The Secretary of the Treasury, in his last report to Congress upon the state of the finances, makes some pertinent observations upon the subject of the surplus revenue and the consequent purchase of the bonds and their application to the sinking fund. He says that to prevent an undue accumulation of money in the Treasury and consequent commercial stringency, only two methods are open to the Department, namely, to deposit the money in the national banks or continue the purchase of United States bonds on such terms as they could be obtained. The former method was deemed to be unwise, and the bond purchases continued. On account of the rapidly diminishing supply of United States bonds on the market, and of the fact that the sudden and great increase in the surplus compelled the immediate purchase of large quantities, it became very difficult to obtain them in sufficient amounts and at fair prices. The Secretary here interposes a brief statement of the successive attempts taken by him to dispose of the constantly accumulating surplus of the public money by purchases becoming more and more difficult of the interest bearing bonds. His recital has so strong a bearing upon the point under discussion that part of it is quoted here :

There were outstanding on June 30, 1889, United States interest-bearing bonds, issued under the refunding act, in the amount of \$815,734,350, of which \$676,095,350 were 4 percents, and \$139,639,000 4½ percents. During the fiscal year 1890 there were purchased of these bonds \$73,923,500 4's and \$30,623,250 4½ per cents, and there remained outstanding June 30, 1890, \$602,193,500 4's, including \$21,650 issued for refunding certificates, and \$109,015,750 4½ per cents. Of the bonds so purchased there were applied to the sinking-fund for the fiscal year 1890 \$27,695,600 4's and \$12,136,750 4½ percents, the residue being ordinary redemptions of the debt.

During this period the Secretary was able to purchase United States bonds at constantly decreasing prices, so that at the end of the fiscal year 1890 the Government was paying for 4 per cent. bonds 7 per cent. less than at the beginning of that period, and for $4\frac{1}{2}$ per cent. bonds $4\frac{1}{2}$ per cent. less; but the diminished supply of bonds held for sale, together with the lower prices which were being paid, had been gradually curtailing the Government purchases, and soon after the beginning of the present fiscal year the growing surplus and the prospective needs of the country made it advisable that steps be taken to obtain more free offerings of bonds to the Government.

Accordingly, on July 19, 1890, a circular was published rescinding that under which purchases had been made since April 17, 1888, and inviting new proposals, to be considered July 24, for the sale of the two classes of bonds before mentioned. Under this circular there were offered on the day prescribed \$6,408,350 4 percents and \$584,550 $4\frac{1}{2}$ percents, at prices varying from 121.763 to 128.263 for 4's, and from 103 $\frac{1}{2}$ to 104.40 for $4\frac{1}{2}$'s, of which there were purchased all the 4 percents offered at 124 or less, amounting to \$6,381,350, and all the $4\frac{1}{2}$'s offered at 103 $\frac{1}{2}$, or less, amounting to \$584,550. As the amount obtained on this day was less than the Government desired to purchase, the provisions of the circular were extended, with the result that further purchases were made, amounting in the aggregate to \$9,652,500 4's and \$706,450 $4\frac{1}{2}$ percents.

It was soon apparent that these purchases were inadequate to meet existing conditions; therefore, on August 19, the Department gave notice that $4\frac{1}{2}$ per cent bonds would be redeemed with interest to and including May 31, 1891; and two days later the circular of August 21 was published, inviting the surrender for redemption of \$20,000,000 of those bonds, upon condition of the prepayment after September 1, 1890, of all the interest to and including August 31, 1891, on the bonds so surrendered. Under this circular there were redeemed \$20,060,700 $4\frac{1}{2}$ percent.

Notwithstanding the disbursements resulting from purchases and redemptions of bonds under the circulars of July 19 and August 21, the industrial and commercial interests of the country required that large additional amounts should be at once returned to the channels of trade. Accordingly, a circular was published August 30, 1890, inviting the surrender of an additional 20,000,000 of $4\frac{1}{2}$ per cents. upon the same terms as before. This was followed by another, dated September 6, inviting holders of the 4 per cent. bonds to accept prepayment of interest on those bonds to July 1, 1891, a privilege which was subsequently extended to the holders of currency 6's. Under this circular of August 30 there were redeemed \$18,678,100 $4\frac{1}{2}$ per cent. bonds, and under that of September 6 there was prepaid on the 4 per cent. bonds and currency 6's interest amounting to \$12,009,951.50.

These prepayments of interest are expressly authorized by section 3699 of the Revised Statutes. They were deemed expedient because of the disposition of the holders of bonds to demand exorbitant prices for them.

The amount of public money set free within 75 days by these several disbursements was nearly \$76,660,000, and the net gain to circulation was not less than \$45,000,000, yet the financial conditions made further prompt disbursements imperatively necessary. A circular was therefore published September 13, 1890, inviting proposals, to be considered on the 17th, for the sale, to the Government, of 16,000,000 of 4 per cent. bonds. The offerings under this circular amounted to \$35,514,900, of which \$17,071,150 were offered at 126 $\frac{3}{4}$, or less, and were accepted.

It should be stated that there is no saving of interest on the $4\frac{1}{2}$ per cent. bonds redeemed under the circulars of August 21 and 30, since all the interest on those bonds to September 1, 1891, the date on which they become redeemable, has been prepaid, and that the reduction in the annual interest charge on the same bonds takes effect only from that date.

Another circular inviting the surrender of $4\frac{1}{2}$ per cent. bonds for redemption, with interest to and including August 31, 1891, was published October 9, 1890. The amount surrendered under that circular during the month of October was \$3,203,100.

The total amount of 4 and $4\frac{1}{2}$ per cent. bonds purchased and redeemed since March 4, 1889, is \$211,832,450, and the amount expended therefor is \$246,620,741.72. The reduction in the annual interest charge by reason of these transactions is \$8,967,609.75, and the total saving of interest is \$51,576,706.01.

It will be seen from the above statement that during the 3 $\frac{1}{2}$ months, from July 19 to November 1, 1890, over \$99,000,000 were disbursed in payment for bonds and interest.

There are many grave objections to the accumulation of a large surplus in the Treasury, and especially to the power which the control of such surplus gives to the Secretary. I am sure those objections appeal to no one with so much force as to the head of the Department upon whom rests the difficult and delicate responsibility of its administration.

HOW SHALL POSTAL SAVINGS FUNDS BE DISPOSED OF?

It has been proposed in several of the measures heretofore before the Congress to invest the funds received on deposit in postal savings banks either in interest-bearing securities of the United States, or in any interest-bearing securities guaranteed by the United States, or finally, in the most approved State securities obtainable at the time. I have shown that the interest-bearing securities of the United States are not available now for distribution of the accumulating surplus revenues, and that investment of savings-bank funds therein seems to be out of the question. I have supposed that legislative sanction could not be obtained for the investment of funds in the bonds of the various States, for the reason that there is present in the public mind the vivid recollection of the repudiation by several of the States of their bonded indebtedness, and of the protracted litigation in others on the same subject.

THE PLAN RECOMMENDED.

I have already recommended a plan which I believe to be feasible, and it contemplates the establishment of postal savings banks, first, in States which have no laws governing private savings banks, and, second, upon suitable petition of a considerable number of the residents of any locality, in any other States.

While the experience of several foreign countries has shown that private savings banks are not antagonized by similar government institutions, the plan I propose removes objection on that score by providing that the rate of interest shall be at least one-half of 1 per cent. less than the average rate paid within a State by private bankers to depositors.

I have recommended that all the postal savings funds received within a State be placed on deposit with the national banks of that State, in such amounts and at such rates of interest as the Secretary of the Treasury shall prescribe. There is thus provided a channel for the disposal of the money which will place it rapidly in circulation in the locality from which it is gathered for original deposit in the postal savings banks, and through which it will unquestionably earn a sufficient sum to pay expenses and a moderate rate of interest to depositors.

And, finally, I have suggested that deposits of postal savings funds shall be declared by special enactment preferred claims against the national banks holding them. I do not think any better security offers itself in the present state of the country and I believe it will be adequate.

OTHER SUGGESTIONS.

There are other suggestions which will occur to the thoughtful mind as to channels for placing the funds of the depositors. One of them is in the direction of greater and much needed expenditures for public, and particularly for post-office buildings. I find that from 1870 to 1890, inclusive, there has been an average expenditure per annum, on account of public buildings, to be used chiefly for custom-houses, post-offices, and court-houses, the large sum of \$3,217,253.00, a total in 21 years of \$67,562,306.86. There could scarcely be conceived a better investment for the public funds than to place them in such Government real estate, which by the very act of its acquirement by the United States, would become of enhanced value and would continue to increase in value year

by year. It would, moreover, give to the people that conception of security which always surrounds investments in real property. There is not only the outlet in the way of ordinary expenditures to be taken into account, but there are the further large needs of the country at this time to be considered; particularly in the direction of additional accommodations for post-offices in numerous towns and cities.

On December 4, 1889, Mr. Vest introduced in the Senate a bill to provide for the erection of public buildings for post-offices in towns and cities where the post-offices receipts for 3 years preceding have exceeded \$3,000 annually. This bill provides for the construction from time to time of buildings for the accommodation of all Presidential post-offices, the annual gross receipts of which for 3 years preceding shall have exceeded the sum of \$3,000, said buildings to be fairly distributed among the several States and Territories. It also provides that the cost of no such building shall exceed \$25,000, and stipulates that the site of every building shall be of such size as to afford a clear space of not less than 50 feet in extent on each side of and beyond the limits of the building, obviously to prudently provide for such extensions and additional accommodations as in a rapidly growing country like this, the public service will probably require at no distant day. The said act contains a provision appropriating the sum of \$10,000,000 to be expended for the object contemplated in the act.

Another bill introduced on February 11, 1890, by Mr. Moody, in the Senate, provides that when any city, town, or village having 4,000 or more inhabitants, shall by its official act petition the Postmaster-General so to do, it shall be his duty, if the facts in the petition be found true, and if the petition be accompanied by a warranty deed for the site, to cause a suitable post-office building to be erected in such city, town, or village, the cost of which shall not be less than \$10,000 nor more than \$50,000. A provision of this act appropriates \$3,000,000 for the purpose.

I think the Government need never be at a loss for some suitable and safe repository for such trust funds as it would receive in its savings banks. No such assumed or anticipated obstacle should for a moment be permitted to stand in the way of their establishment. We have the experience of nearly the whole civilized world to teach us the utility and beneficial influences of postal savings banks, and the Congress which will bestow their privileges upon all the people will mark a memorable milestone in the history of our progress.

Yours very truly,

JOHN WANAMAKER,
Postmaster-General.

Hon. JOHN H. MITCHELL,
United States Senate.

APPENDIX.

EXHIBIT 1.

H. R. 13404.

A BILL to establish postal savings banks and encourage small savings.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Postmaster-General is hereby authorized to direct such post-offices as he may designate as postal savings banks to receive deposits for remittance to the subdepositories as hereinafter provided for, and to repay the same to the depositors, or to their legal representatives, under such regulations as he may prescribe.

SEC. 2. That the Postmaster-General shall furnish and keep for sale at each postal savings bank adhesive stamps of the denominations of ten cents and one dollar, to be known as postal savings stamps, and shall also furnish and keep for use of the purchasers of said stamps postal savings cards, upon which such stamps when sold shall be affixed.

SEC. 3. That all postal savings moneys left with postmasters at the receiving offices, agreeably to the provisions of this act, shall be forwarded by them, at stated intervals to be fixed by the Postmaster-General, and not less frequently in any case than once a month, under regulations relating thereto, to such post offices of the first class as may be designated by the Postmaster-General as subdepositories of postal savings funds; and the postmasters at such subdepositories shall, at the end of every calendar month, make detailed reports to such officer of the Treasury as the Secretary of the Treasury may designate of all postal savings funds as shall have been received by them during the preceding month from the receiving offices, and at the same time furnish copies of said reports to the Postmaster-General; and, also, transmit said moneys for deposit to such banks or banking institutions as may make application therefor to the Secretary of the Treasury, and be designated by him for the purpose, in such amounts, to be held at such rates of interest as the Secretary of the Treasury may provide for; and all such postal savings deposits are hereby declared to be preferred claims against the banks holding the same.

SEC. 4. That it shall be the duty of the Postmaster-General and Secretary of the Treasury to provide and issue interest-bearing certificates of deposit of the denominations of the twenty and one hundred dollars each, bearing interest at a rate not to exceed two and four-tenths of one per centum per annum upon deposits of twenty dollars or a multiple of twenty dollars; interest to be paid upon such deposits only as remain a period of not less than six months, and shall date from and begin the first of the calendar month following the deposit of the amount of twenty dollars or its multiple.

SEC. 5. That the Secretary of the Treasury is hereby authorized to loan to banks or approved depositories within the States, when such postal deposits are made, upon such securities and under such rules and regulations as he may prescribe, at a rate of interest not less than three per centum per annum, all such postal savings funds.

SEC. 6. That the amount of accumulations of deposits of any one individual shall not exceed five hundred dollars.

SEC. 7. That the banks receiving deposits of postal savings funds, as provided in this act, shall keep separate and distinct accounts of all receipts and payments, and a balance sheet of such accounts from the first of January to the thirty-first of December in every year, inclusive, and for any shorter period if the same be required, shall be filed with the Secretary of the Treasury and the Postmaster General, and laid before Congress not later than the thirty-first day of January in every year.

SEC. 8. That it is hereby made the duty of the Postmaster-General and the Secretary of the Treasury to designate such officers and subdivisions of their respective Departments to take charge of all business in connection with postal savings funds as may be necessary.

SEC. 9. That the provisions of the several statutes relating to the larceny, embezzlement, or misappropriation of the postal funds, money-order funds, postage stamps, stamped envelopes, or postal cards, and to the forging or counterfeiting of postage stamps, the stamps printed upon stamped envelopes, or postal cards, or the dies, plates, or engraving used in the manufacture of the same, be and they are hereby extended, including the punishment prescribed therefor, and made applicable to the commission of similar crimes in connection with the postal savings system hereby established.

SEC. 10. That the Postmaster-General is hereby authorized and directed to promulgate rules and regulations, not inconsistent with law, for carrying out the purposes of this act, and for conducting the business to which relates.

EXHIBIT 2.

Interesting details of postal savings bank systems in Sweden, Great Britain, Austria, Belgium, The Netherlands, France, Russia, and Italy.

SWEDEN.

At the close of 1888 the number of post-offices empowered to transact savings-bank business was 1,841, as against 1,808 at the end of 1887. Although this increase is not as large as in the preceding year, still it corresponds to the increase in the number of post-offices, for in both years the percentage of post-offices acting as agencies of the post-office savings-bank in Sweden was 93. While in 1887 it became necessary to augment the number of post-office savings-banks in a larger measure in the two districts of Malmöhus and Kristianstad than in the rest of the country, the rate of increase in 1888 was about the same throughout the Swedish postal territory. The greatest number of newly established post-office savings banks in any one Government district was only 6 in the year under report, as against 18 in 1887. In the district of Göteborg och Bohus there was even a decrease in the number of savings-bank offices.

In comparing the number of post-office savings banks with the area and population of Sweden we find that there was, on an average, one such establishment to every 235,21 square kilometers and 2,597 inhabitants in 1888, while in 1884, the first year in which the institution was in operation, there was one postal savings-bank agency to as many as 274,93 square kilometers and 2,949 inhabitants. Although this does not constitute any considerable advance, yet it may be looked upon as satisfactory if the rather low rate of increase of the population in the country is taken into account.

The total amount of business done in 1888 showed a not inconsiderable increase. The deposits numbered 212,131 and aggregated 3,136,881 crowns, making, on an average, 45 deposits, amounting to 661 crowns, to every 1,000 inhabitants. In 1887 this average was but 40 as regards the number and 384 crowns as concerns the amount of deposits. The withdrawals did not show the same rate of increase; they reached the number of 41,287 and the total amount of 1,496,015 crowns, this being, on an average, 9 withdrawals, amounting to 315 crowns per 1,000 inhabitants.

A comparison of the business transacted by the post-office savings banks in 1888 and 1887 in the various government districts shows that in 1888 there was an increase in the number of deposits in all the districts with the exception of those of Södermanland, Blekinge, Kristianstad, Malmöhus, Holland, Örebro, and Gefleborg, where the average number of deposits per 1,000 inhabitants was 51, 38, 17, 27, 29, 42, and 49 respectively, in 1888, as against 58, 39, 18, 30, 32, 43, and 57 in 1887. In the districts of Elfsborg and Vestmanland the deposits showed the same figures as in the preceding year.

There was an increase in the amount of deposits in all the districts, reaching in Kronoberg and Norbotten the unusually high percentage of 277 and 182. The number of withdrawals remained unchanged in 14 government districts. In Stockholm City and 8 other districts it showed an increase, there being a falling off in 2 districts.

The amount of withdrawals increased in all the districts except in that of Södermanland.

The growing interest of the public in the post-office savings bank is demonstrated by the increase in the number of depositors, which was 174,747 in 1888 as against 152,016 in 1887, the increase being 22,731, or 14.95 per cent. At the close of the year under review the amount on deposit reached 4,650,743.62 crowns, an increase of 1,765,346.87 crowns, or 61.18 per cent. over the preceding year. As compared with the population, the sum standing to the credit of depositors amounted on an average to 979.46 crowns per 1,000 inhabitants.

A comparison of the number of depositors and the amount on deposit in 1884 with the corresponding figures of the year under report shows that since the institution of the post-office savings bank in Sweden the number of depositors has increased by 95,234, or 119.77 per cent., and the total amount standing to their credit by 3,823,102.50 crowns, or 461.93 per cent.

There was a sensible decrease in the number of agencies for the sale of savings stamps as compared with the preceding year. One hundred and fifty-nine of these agencies held by private persons were closed. Although the administration took measures to meet the most urgent requirements by increasing the number of savings stamps agencies at post-offices by 41, there still remained an actual decrease of 118. The total number of agencies for the sale of savings stamps throughout the country was 4,224, there being thus 1 agency to 102.51 square kilometers, as against 1 to 99.73 square kilometers in 1887.

The number of savings stamps sold to the public was 801,028, and the value represented by them reached 80,102.80 crowns. A comparison of these figures with those of 1884 shows that in the course of the 5 years during which the post-office savings bank has been in existence the sale of savings stamps, which amounted to 1,558,676 in 1884, decreased to nearly one-half of its original figure.

According to the accounts of the post-office savings bank department for 1888 there was a considerable increase in the total amount of business transacted. In 1888 the receipts and payments reached the sum of 8,523,893.80 crowns as against 5,812,067.81 crowns in the preceding year, so that the financial results may be considered as entirely satisfactory. The cost of management only reached 1.59 per cent. of the total amount of transactions as compared with 2.33 per cent. in 1887.

The cost of management, both in itself and in proportion to the number of transactions effected in the course of the year, and the number of accounts open at the close of the year, was lower in Sweden than in the post-office savings banks of any of the other states.

GREAT BRITAIN.

(1890.)

There has been an increase in savings-bank business, though at a slightly lower rate than in 1888, when the amounts of the deposits transferred from trustee savings banks were unusually large.

The deposits in the year numbered 8,101,120, amounting to £19,814,308 as against 7,540,625 and £19,052,226, the number and amount for the year 1888. The withdrawals were 2,757,848 in number, amounting in all to £16,814,268, showing an increase of 124,040 in number and of £1,011,533 in amount over the number and amount for 1888. As a net result of these transactions a total sum of £62,999,620, including interest, remained to the credit of depositors on the 31st December, 1889, being an increase of £4,443,226 for the year as compared with an increase of £4,582,329 in 1888. The amount of interest credited to depositors was £1,443,186, or £110,348 more than in 1888.

The greatest number of deposits on one day was 55,095, amounting to £137,336, and made on the 30th December, but the largest amount deposited on one day was £158,218 on the 31st December. The greatest number of withdrawals on one day was 18,499, amounting to £93,922, made on the 17th December. The average amount of each deposit was £2 2s. 11d. as compared with £2 10s. 6d. in 1888. This decrease is, however, chiefly due to the large amounts of many of the transfers from trustee savings banks in 1888. The average amount of each withdrawal was £6 1s. 11d. as compared with £6 in 1888.

The number of accounts opened in 1889 was 924,010, and 637,128 were closed. The corresponding numbers for 1888 were, respectively, 887,460 and 618,294. The total number of accounts opened at the end of the year was 4,507,809, or 286,882 more than in 1888, distributed as follows:

	Number.	Proportion to population.	Average balance due to each depositor.
England and Wales.....	4,162,529	1 to 7	£ s. d. 13 19 5
Scotland.....	159,920	1 to 25	8 12 3
Ireland.....	185,360	1 to 25	18 14 11
United Kingdom.....	4,507,809	1 to 8	13 19 6

In 1888 the proportion to population and the average balance were, in England and Wales, 1 in 7 and £13 17s. 3d.; in Scotland, 1 in 27 and £8 8s. 11d.; and in Ireland, 1 in 28 and £18 15s. 4d., and in the United Kingdom 1 in 9 and £13 17s. 5d.

The total number of post-offices open for the transaction of savings-bank business on December 31, 1889, was 9,353, or 331 more than in 1888, of which 286 were opened in

England and Wales, 25 in Scotland, and 20 in Ireland. Whenever a new savings bank office is opened a handbill calling attention to the fact and describing the chief advantages of the post-office savings-bank system is distributed from house to house in the neighborhood.

The number of registered friendly societies authorized during the year to open accounts without limit as to amount in the post-office savings bank was 800, and the number of provident and charitable societies authorized to open accounts during the year was 2,197.

Only 284 penny banks invested their funds during 1889 as compared with 338 in 1888. Of the number last year 130 were connected with schools, of which 44 were board schools.

A novel experiment was made last year by the Ragged School Union as a first lesson in thrift. At the annual distribution of prizes 335 scholars received from the union deposit books showing that 5s. had been placed to the credit of each in the post-office savings bank. In ordinary circumstances the attendance of a depositor is required when an account is opened, but, as in this case, such a requirement would have made the arrangement impossible; all the necessary preliminaries were settled in coöperation with the secretary of the union, and the president, the Earl of Aberdeen, expressed publicly his thanks to the department for doing so. By a curious coincidence the same plan appears to have been adopted in Paris, where, at a party given in December last at the Elysée, to the pupils of the municipal schools, each child received, as well as toys and clothing, a savings bank book with an entry of a deposit of 10 francs.

Special arrangements also have been made to facilitate the deposit and withdrawal of money in other exceptional cases. On one occasion bonuses amounting to £1,686 were placed to the credit of 340 men employed in a large brewery. A post-office clerk attends regularly at Walmer Barracks on pay days to receive deposits, which, on an average, have numbered 66 at each visit. In the case of a regiment suddenly ordered on foreign service, arrangements were made for the repayment of deposits at 24 hours' notice.

The claims made by the representatives of deceased depositors numbered 20,740 as compared with 21,323 in 1888. The applications respecting the money of depositors who had become insane numbered 440 last year, and 377 in 1888. Under the new regulation made in that year 2,371 transfers of deposits from one account to another were made in 1889.

During the year 31 trustee savings banks were closed and deposits amounting to £716,814, and stock investments of the nominal value of £13,860, were transferred to the books of post-office savings bank, in addition to deposits amounting to £48,268, and £3,144 stock transferred in the ordinary course of business. In 1888 23 trustee savings banks were closed, but the total amount transferred was £1,133,497, with £22,389 stock.

AUSTRIA.

The Austrian post-office savings bank department has been able to publish a most satisfactory report on the business of this bank during the year 1889, which has developed in a highly successful manner. The aggregate results of the savings bank and check business considerably exceeded those of the preceding year. The savings bank transactions showed all desirable steadiness. Numerous persons belonging to the poorer classes joined the ranks of the depositors. The percentage of increase in the amount on deposit was higher than in any preceding year. The facilities for effecting check business were likewise extensively used by the public at large during the year under report. This fact is especially demonstrated by the great increase in the number of persons possessing check books, and by the considerable augmentation in the receipts and payments in this branch of the service.

In 1889 the aggregate amount of receipts and payments on check accounts exceeded 1½ milliards of florins; nearly one-half of these transactions were made at the Post-Office Savings Bank Department itself. A further satisfactory feature in the post-office savings bank business consists in the development of the clearing house transactions, the amount of which reached, as early as December, 1889, 29.2 per cent. of the total amount of the business done in all the branches of the post-office savings bank service. The gratifying results of the year 1889, which show an increase of 25 per cent. over the previous year, are the natural consequence of the satisfactory progress of business in all the departments.

We give below some particulars showing the details of the transactions effected :

In 1889 the savings bank deposits amounted, inclusive of interest, to 18,625,680 florins, and the withdrawals to 15,715,911, leaving an excess of deposits of 2,909,769 florins.

The number of savings bank accounts opened in 1889 was 131,071; in 1888, 121,729, being an increase over 1888 of 9,342.

The total number of savings bank accounts remaining open at the close of 1889 was 719,431, and at the end of 1888, 655,335, this being 64,096 accounts more than in 1888.

This is the highest increase which has taken place during 5 years, it having only been exceeded in the year next following that in which the post-office savings-bank system was started.

As a depositor is prohibited by the legal provisions to open more than one account for himself, the number of accounts open at the close of the year, also represents the number of depositors. In the course of 1889, 150 cases were discovered of persons having opened several accounts in their own favor. In accordance with the provisions in force the balances of the several accounts were added together by the post-office department and placed to the credit of a single account.

The greater part of the above-mentioned 719,431 depositors in the post-office savings bank, viz, 222,511, fall to the share of Lower Austria. Then follow Bohemia with 179,713 depositors, Moravia with 77,015, and Galicia with 68,674, the list being closed with the provinces of Styria, Tyrol, and Vorarlberg, Upper Austria, the Coast Lands (Görz, Gradisca, Istria, and Trieste), Silesia, Bukowina, Carniola, Salzburg, and lastly Dalmatia, where the number of depositors in the post-office savings bank is the smallest.

In the Austrian half of the monarchy, 31 in every 1,000 inhabitants were depositors in 1889; in 1888, the number of depositors compared with the population was only 29 to 1,000.

If we contrast the number of depositors in the post-office savings bank with the population of the various provinces, the order runs entirely differently from the above. Although we find Lower Austria still at the head of the list, and this with 88 depositors in 1,000 inhabitants, the order of the other provinces is completely changed, viz, Salzburg with 43, Silesia with 36, Moravia with 34, Upper Austria with 32, densely populated Bohemia with 31, Tyrol and Vorarlberg with 31, Carinthia with 30, Styria with 27, the Coast Lands (Istria, Görz, Gradisca, and Trieste) with 27, Bukowina with 18, Carniola with 17, Galicia with 11, and Dalmatia with 10 depositors in every 1,000 inhabitants.

The great majority of depositors, viz, nearly 76 per cent. belong to the German-speaking population of the monarchy. The rest is divided as follows among the various nationalities: 15 per cent. are Bohemians, 5 per cent. are Poles, 2.6 per cent. Italians, and a very small percentage are Slavonians, Croatians, Ruthenians, and Roumanians.

61.5 per cent. of all the depositors were men, 37.6 per cent. women, and 0.9 per cent were associations, corporations, etc.

84 per cent. of the depositors were able to write, and 14.4 per cent. were unable to do so; with regard to 0.6 per cent. of the depositors nothing was ascertained in this respect. The remainder was composed of associations, corporations, etc.

The statistical records taken with a view to a classification of the depositors according to their occupation or profession, afford a satisfactory proof of the fact that youthful depositors (children, school children, and students) were the most numerous class, forming as they did 33.5 per cent. of the new depositors. The extensive use made by the young of the post-office savings bank must partly be attributed to the efforts made by teachers and postal officers to foster a thrifty spirit among them. This category of depositors is followed by tradespeople, mechanics, and male and female servants. The number of societies, public offices, corporations, and institutions availing themselves of the post-office savings bank was likewise very considerable. At the close of the year 1889, the list of the post-office savings bank depositors contained 3,110 societies of every kind, foremost among which were fire brigades, associations for the sick, school societies, trade associations, workingmen's societies, sporting societies, clubs, choral societies, savings and lottery societies, charitable associations, benevolent and religious societies, etc. More than half the number of these societies were in Bohemia, Lower Austria, and Tyrol.

At the close of 1889, the number of corporations and institutions having made deposits in the post-office savings bank numbered 2,296. More than half of this number were church administrations, ecclesiastical corporations, parishes, and prebends. The remainder were municipalities, institutes for the poor, school boards, foundations, Government offices, military messes, uniform and band funds, military and police headquarters, libraries, hospitals, etc.

In Austria an arrangement is in force according to which deposits can be made through the medium of rural messengers whose duty it is to pay over the money intrusted to them by the inhabitants of the rural district to the post-offices by which they are employed. In consequence of the praiseworthy zeal and intelligence with which this service is carried out, this branch of the savings bank business showed most satisfactory results in many rural delivery districts. In the course of 1889, deposits were collected by rural messengers in rural delivery districts and remitted to the post-office savings bank in 22,949 cases, the total amount collected in this manner being 675,726 florins. The most satisfactory results in this branch of business

were obtained in Lower Austria and Bohemia, whereas in Galicia, Carniola, and the coast lands no transaction was effected through the medium of rural messengers.

As compared with the year 1888, there was an increase of 2,847 in the number of deposits collected by rural letter carriers, and of 68,927 florins in the amount of the same.

Judging from the facts and the satisfactory results recorded in the above summary, it may be expected that the Austrian post-office savings bank will continue in the path of progress, and that by its agency a thrifty spirit will be promoted among the poorer classes of the population, and their economic situation thereby be improved.

BELGIUM.

We gather from the last report of the Belgian savings and pension bank, that, in the course of 1888, 125,937 accounts were opened and 73,873 closed. The number of accounts remaining open at the end of the year was 598,675, of which 593,979 were in the names of private persons and 4,696 in those of public institutions, as against 546,611 accounts open at the close of the preceding year, of which 542,057 belonged to private persons and 4,554 to public institutions. 1,193,880 deposits were made of the total amount of 119,525,676 francs, making an average of 100.01 francs per deposit, as compared with 112.03 francs in 1887. The number of withdrawals was 319,338, aggregating 106,169,928 francs in amount, this being an average of 332.42 francs per withdrawal as against 380.89 francs in 1887.

The amount of interest added to the principal on the 31st of December, 1888, was 6,927,306 francs (6,160,285 francs in 1887), and the sum (inclusive of interest) standing to the credit of depositors on that date was 260,224,436 francs, viz, 249,998,195 francs to the credit of private depositors, and 10,226,243 francs to that of public institutions. The average amount standing to the credit of each account was, therefore, 434.67 francs as against 438.96 in 1887. The number of deposits effected to the credit of accounts current by communes and public institutions at the Central Bank, at the branches of the National Bank, and with the collectors of taxes was 29,159 for a total amount of 22,920,103 francs (as against 30,794 deposits for 25,076,391 francs in 1887), and that of withdrawals 47,209 for a total amount of 23,443,151 francs (as compared with 45,653 withdrawals amounting to 23,360,890 francs in 1887). The interest added to the capital was 98,486 francs (as against 106,560 francs in 1887), and the total amount, inclusive of interest, standing to the credit of these accounts current reached 8,100,360 francs (8,524,922 francs in 1887).

Thus the total amount standing to the credit of both the ordinary accounts and the accounts current on the 31st of December, 1888, was 268,324,798 francs (248,466,306 francs in 1887). The average amount of deposits below 100 francs was 13.62 francs. The percentage of deposits amounting to 100 francs and less was 90 (89 in 1887), and that of deposits exceeding the amount of 100 francs was 10 (11 in 1887). The percentage of accounts having on the 31st of December a balance of less than 100 francs was 65 (66 in 1887), and that of accounts with a balance exceeding 100 francs was 35 (34 in 1887).

In the course of the year under review the following definitive investments were made: 18,379,384.30 francs in Government stock, treasury bonds, and bonds of the "Caisse d'Annuités;" 6,173,182.53 francs in bonds of the "Crédit communal," and treasury bills; 5,288,268.88 francs in bonds of Belgian companies; 997,000 francs in bonds of mortgage on houses; 404,600 francs in bonds of mortgage on landed property; and 6,669 francs in the savings bank premises.

The provisional investments were as follows: 78,221,371.08 francs in bills on Belgium; 278,779,517.09 francs in foreign bills, and 14,901,350 francs in loans granted on the security of stocks. The average rate of discount of the national bank was 3.32 per cent., while that of the savings bank (on Belgian bills) varied from 3 to 5½ per cent. The revenue from the definitive investments amounted to 5,794,824.19 francs, and that from the provisional investments to 2,703,371.44 francs, making a total revenue of 8,498,195.63 francs. At the close of 1888 the value of the definitive investments was 175,790,363.45 francs, and that of the provisional investments 84,824,307.73 francs. Thus, the total value of investments was 260,614,671.18 francs. The interest allowed to depositors amounted to 7,260,838.03 francs, and the cost of management to 639,896.41 francs. The net revenue transferred to the reserve fund was 597,461.19 francs, bringing this fund up to the sum of 7,238,599.78 francs at the close of 1888, as against 6,641,138.59 francs on the 31st of December, 1887.

The investments in the form of loans granted on the security of stocks gave rise to 772 transactions of a total amount of 14,901,350 francs, as against 859 transactions of an aggregate sum of 14,841,300 francs in 1887. Thus, the average amount of each transaction amounted to 19,302 francs.

A classification of the deposits made in 1888, according to the amount of each of them, shows that out of every 100 deposits, there were 77 per cent. of amounts between 1 and 20 francs, 12.9 of amounts between 20 and 100 francs, 6.8 of amounts between 100 and 500 francs, 1.7 of amounts between 500 and 1,000 francs, 1.5 of amounts

between 1,000 and 5,000 francs, and 0.1 per cent. of amounts beyond 5,000 francs. There were 45 deposit books in every 100, with balances between 1 and 20 francs, 20.3 with from 20 to 100 francs, 15.9 with from 100 to 500 francs, 6.4 with from 500 to 1,000 francs, 11.2 with from 1,000 to 5,000 francs, and 1.2 with balances exceeding 5,000 francs.

According to the statistics of the school savings banks, these institutions showed the following results on the 31st of December, 1888:

Out of the 7,447 primary schools (inclusive of infant schools, and the schools of primary instruction attached to educational institutions of other classes) there were 4,798 which took part in the savings bank business. The number of children possessing deposit books was 154,192, viz, 86,309 boys and 67,883 girls. In addition to these, 40,929 children, 21,867 of whom are boys and 19,057 girls, make deposits without as yet possessing depositors' books. There were, therefore, 2,649 schools in which no savings bank business was transacted. These schools numbered 696,726 children, viz, 337,608 boys and 359,118 girls.

The total amount standing to the credit of children of primary schools reached 3,576,226.29 francs on the 31st of December, 1888, of which sum 1,960,111.42 francs belonged to boys and 1,616,114.87 francs to girls.

On the same date the number of middle-class schools and of educational establishments for adults in which savings bank business is transacted was 258, that of depositors was 5,731, and the amount standing to their credit reached 158,175.90 francs.

In adding up the above figures, we find that on the 31st of December, 1888, there was a total number of 5,056 schools of all kinds, in which 200,847 pupils of both sexes had saved a total amount of 3,734,402.19 francs. We may add that 199,724 pupils invested their savings, amounting to 3,701,759.54 francs in the Caisse générale d'épargne et de retraite under the guaranty of the state, while the others, 1,123 in number, possessing a total sum of 32,642.65 francs, either paid in their savings to private savings banks or invested them in government stock. Of the former, 155,370 pupils, whose savings amounted to the sum of 2,711,753.93 francs effected their deposit through the medium of the post-office.

THE NETHERLANDS.

At the close of the year 1888 the number of open accounts was 201,763 (169,027 at the end of 1887), this being an increase of 32,736 accounts, or 19.3 per cent., over the preceding year. The average number of deposits made by each depositor was 2.2, this average being only exceeded in the provinces of North Holland, North Brabant, and Utrecht (2.5, 2.3, and 2.3 per cent., respectively). On the other hand, the provinces of Limburg and Drente continued to show the lowest average, viz, 1.8, and 1.6 per cent. As regards the proportion between depositors and inhabitants, the province of North Holland still headed the list with 64.4 depositors to every 1,000 inhabitants; then followed South Holland (45.6), Utrecht (44.8), Limburg (43.7), and North Brabant (42.1), the province of Groningen coming last with 11.4 depositors per 1,000 inhabitants. The average throughout the country amounted to 41.5 per thousand.

In 1888 the average share of every 1,000 inhabitants in the total amount deposited throughout the Kingdom was 2,169.76 florins, as against 1,786.57 florins in 1887, and the average amount of each deposit 20.82.5 florins, as compared with 19.39 in the preceding year.

The number of deposits was 445,799 and the total amount 9,282,802.89 florins, this being an increase of 51,562 in the number and of 1,639,371.04 florins in the amount of deposits as compared with 1887.

There was an increase of 0.4 per cent. in the number of deposits effected by means of postage stamps, and a decrease of 1.3 per cent. in the number of deposits below 10 florins, as against 1887.

In 1888 the amount of withdrawals reached 29.1 per cent. of the total amount deposited in the course of the year added to the sum on deposit on the 31st of December, 1887, the number of withdrawals being 131,969 and their amount 6,773,168.93 florins.

The average amount of each withdrawal was 51.32 florins (as against 51.42 florins in 1887).

The interest accruing from the invested deposits was 428,801.73 florins, while the interest allowed to depositors amounted to 318,051.67 florins, thus leaving for the year 1888 a surplus of 110,750.06 florins, which exceeded that obtained in 1887 by 14,533.52 florins. The average rate of interest yielded by the invested funds was 3.35 per cent.

The cost of management amounted to about 100,229.54 florins, this being 0.71 per cent. of the total amount due to depositors. In 1887 this item reached 0.84 per cent. of the amount on deposit.

In the course of 1888, the savings bank service was extended to 21 post-offices, while 4 auxiliary offices were closed for this branch of business. At the close of the

year, 234 post-offices and 949 auxiliary offices, making a total of 1,183 establishments (1,164 in 1887), were open for the transaction of savings-bank business. At 38 or 3.2 per cent. (44, or 3.8 per cent. in 1887) of these establishments no transaction was effected.

42,719 of the 201,763 accounts open on the 31st of December, 1888, had a balance of less than 1 florin, 56,498 one of from 1 to 10 florins, 66,174 one of from 10 to 100 florins, and 36,372 one of 100 florins and more.

The annual percentage of increase in the number of accounts and in the amount due to depositors from 1882 to 1888, was as follows:

Year.	Number of accounts.	Amount on deposit.
	<i>Per cent.</i>	<i>Per cent.</i>
1882.....	102.5	135.0
1883.....	46.8	59.0
1884.....	33.6	44.5
1885.....	23.6	36.9
1886.....	24.6	39.2
1887.....	20.7	25.8
1888.....	19.4	20.5

There was an increase in the number of applications of withdrawal and of authorizations of repayment issued by the central direction transmitted by telegraph. In 1888 there were 55 telegraphic authorizations for the repayment of a total sum of 18,037.25 florins.

FRANCE.

We extract the following particulars from the report of the French ministry of commerce, industries, and the colonies, on the business of the French national savings bank for 1888:

In the course of 1888 the deposits reached 1,456,332 in number, and 169,348,619.19 francs in amount; on the other hand, the number of withdrawals was 536,891, aggregating 133,291,211.15 francs in amount. Thus, the deposits exceeded the withdrawals by 36,057,408.04 francs.

At the close of 1887, the amount standing to the credit of depositors was 223,519,666.19 francs. If we add to this sum the above-mentioned excess of receipts over payments of 36,057,408.04 francs, and the interest added to the capital of depositors, in 1888, viz, 7,211,528.53 francs, we find that the total amount due to depositors at the close of 1888 was 266,788,602.76 francs.

The deposits are divided into two classes, namely, first deposits and subsequent deposits.

First deposits.

Year.	Number.	Amount.	Average amount per deposit.
		<i>Francs.</i>	<i>Francs.</i>
1882.....	227,438	47,606,879.75	210
1883.....	207,827	40,440,833.07	194
1884.....	222,159	46,780,639.82	210
1885.....	221,107	52,185,749.17	236
1886.....	239,502	58,522,168.38	244
1887.....	236,888	58,640,041.71	247
1888.....	261,966	67,573,159.67	257
	1,616,887	371,749,471.57	229

As this table shows, there was a considerable increase in the number and amount of first deposits. The average amount of each first deposit rose from 247 francs in 1887 to 257 francs in 1888.

The number of cases in which opposition was made in the course of 1888 was only 18 in more than 270,000 accounts opened by married women without the assistance of their husbands, and 2 in more than 540,000 accounts of minors opened without the assistance of their legal representatives. This is an additional proof of the expediency of the liberal provisions of the law of the 9th of April, 1881. Lastly, there were but 31 ordinary cases of opposition on the part of third persons in more than 1,000,000 accounts.

Of the 261,811 accounts opened in the course of the year, 150,253 are in the names of men, and 111,558 in those of women. In these totals the percentage of accounts opened to heads of agricultural, industrial, and commercial establishments was 7.03, to agricultural laborers 5.81, to factory hands 15.13; to domestic servants 11.82, to soldiers and sailors 2.65, to clerks 8.76, to artists 4.97, to proprietors, and ladies and gentlemen of private means, 14.94, and to minors having no calling 28.89.

Further, 155 accounts were opened for various associations, viz, 95 for societies of mutual assistance, 48 for assimilated societies, and 12 for other associations. The total number of accounts opened by societies of this kind from the 1st of January, 1882, to the 31st of December, 1888, was 844.

A statement of the subsequent deposits effected since the beginning of 1882 is given below :

Year.	Number.	Amount.	Average amount of each deposit.
		<i>Francs.</i>	<i>Francs.</i>
1882	245,717	17,027,502.06	69.29
1883	489,606	32,594,938.13	66.57
1884	694,972	47,316,475.00	68.80
1885	818,600	60,742,740.78	75.67
1886	956,846	74,710,132.09	78.07
1887	1,054,164	85,746,736.27	81.28
1888	1,193,814	101,739,643.87	85.22
	5,454,519	419,878,168.20	76.97

Thus, there was an increase of 13.16 per cent. in the number, and of 18.65 per cent. in the amount of subsequent deposits.

The average amount of each subsequent deposit, which was 81.28 francs in 1887, rose to 85.22 francs in 1888.

As compared with 1882 there was an increase of 385.84 per cent. in the number, and of 497.51 per cent. in the amount of subsequent deposits.

We complete these particulars with a tabulated statement of the deposits of all kinds (first and subsequent deposits) paid in since the beginning of 1882.

Year.	Number.	Amount.	Average amount of each deposit.
		<i>Francs.</i>	<i>Francs.</i>
1882	473,155	64,634,381.81	136.60
1883	697,433	73,035,771.20	104.72
1884	917,131	94,097,114.82	102.59
1885	1,039,707	112,928,489.95	108.61
1886	1,196,348	133,232,300.47	111.36
1887	1,291,852	144,386,777.98	111.76
1888	1,455,780	169,312,803.54	116.30
	7,071,406	791,627,639.77	111.94

Thus there was an increase of 12.68 per cent. in the number and of 17.26 per cent. in the amount of deposits, as compared with 1887, and one of as much as 207 per cent. in the number and of 161 per cent. in the amount of these transactions as against 1882.

The above figures comprise both the deposits effected by means of savings-stamps and the amounts transferred from private savings banks to the national savings bank. From the beginning of 1882 to the close of 1888 these transfers were 68,368 in number and 13,064,023.83 francs in amount, the average amount of each transfer being thus 191.08 francs. There is a steady decrease both in the number and in the amount of the transfers effected from private savings banks to the national savings bank; an increase is only observable in the average amount of each transfer, which rose from 148 francs in 1882 to 277 francs in 1888. On the other hand, 16 accounts, with an aggregate amount of 9,299.60 francs, were transferred from the national savings bank to private savings banks.

The repayments are divided into two classes: (1) Partial and total repayments, and (2) investments in Government stock on behalf of depositors.

Partial and total repayments.

Year.	Number.	Amount.	Average amount of each repayment.
		<i>Francs.</i>	<i>Francs.</i>
1882	52,540	16,410,817.90	312.34
1883	145,934	42,154,983.65	288.26
1884	213,230	56,025,991.86	262.74
1885	288,784	74,752,309.38	258.15
1886	377,613	97,848,996.34	259.12
1887	454,855	112,904,198.81	248.22
1888	533,372	129,200,313.17	242.23
	2,066,328	529,297,611.11	256.15

The rate of increase in the partial and total repayments which, in 1887, was 20.45 per cent. as regards the number, and 15.38 per cent. as concerns the amount of the same as compared with 1886, decreased to 17.26 and 14.43 per cent., respectively, in 1888. The average amount of each repayment, which was 248.22 francs in 1887, decreased to 242.23 francs in 1888.

From the beginning of 1882 to the close of 1888 there was an increase of 915.17 per cent. in the number, and of 687.28 per cent. in the amount of these repayments.

In 1888 the transactions of all kinds (deposits and withdrawals) were 1,992,445 in number and 302,528,016.31 francs in amount, this being an increase over 1887 of 241,860, or 13.81 per cent., as regards the number, and of 40,637,270.57 francs, or 15.51 per cent., as concerns the amount of these transactions.

The average number of transactions effected at each post-office, which was 87 in 1882, gradually rose to 136 in 1883, 174 in 1884, 201 in 1885, 237 in 1886, 260 in 1887, and 294 in 1888.

The number of post-offices entrusted with the transaction of savings bank business increased from 6,024 in 1882, to 6,193 in 1883, 6,478 in 1884, 6,620 in 1885, 6,649 in 1886, 6,712 in 1887, and 6,765 in 1888.

The amount of interest credited to depositors in 1888 was 7,211,528.53 francs, as against 5,988,768.01 francs in 1887.

RUSSIA.

The establishment of postal and telegraph savings banks in Russia was sanctioned by an imperial decree of the 26th of July (7th of August), 1889. These banks will carry on business in coöperation with the existing savings banks of the imperial bank under regulations, the principal of which are given below.

The management of the savings banks of the imperial bank shall, with the approval of the manager of the imperial bank, be intrusted to the postal administration at any place where the chief postal and telegraph administration shall consider this measure as necessary.

The minister of the interior is, with the approval of the minister of finances and of the imperial comptroller, empowered to issue regulations for the management of the postal and telegraph savings banks, and, if necessary, to fix the amount of the funds to be placed at the disposal of these banks.

In order to control the amount of deposits, the minister of the interior may, with the approval of the minister of finances, issue savings stamps, the designs of which shall be submitted to the managing senate for publication.

The minimum amount of a deposit is fixed at 25 kopeks, and the maximum amount standing to the credit of any depositor at 1,000 roubles.

The deposits paid in to the postal and telegraph savings banks shall enjoy all the privileges granted with regard to the deposits in the savings banks of the imperial bank.

The commission paid to postal and telegraph officers for the management of the savings banks shall be defrayed out of the total profit of the savings banks of the imperial bank. This commission amounts to 10 kopeks for each new deposit book issued, 10 kopeks for each amount of 100 roubles deposited, and 10 kopeks at the close of the year for every account that has been open for not less than 1 year. The amount of commission paid to each postal and telegraph savings bank may not be less than 50 roubles per annum.

The commission paid to the employés of the savings banks of the imperial bank, shall be defrayed out of the total profits of the savings banks of this bank. It shall

not exceed one-half of the amounts fixed for the officers of the postal and telegraph savings banks.

The deposit books and all other forms are exempt from stamp duty.

The correspondence exchanged between the postal and telegraph savings banks, as well as with the savings banks of the imperial bank, is forwarded free of postage.

ITALY.

In 1887, for the first time since they were inaugurated, the Italian post-office savings banks record a decrease in the deposits as compared with the preceding year. While the deposits made in 1886 exceeded those paid in during 1885 by nearly 21,000,000 lire, the savings banks received 4,000,000 lire less in 1887 than in 1886.

The excess of deposits over withdrawals only reached 13,000,000 lire, which is the least satisfactory result obtained since the year 1878.

This regrettable state of things is to be ascribed, in the first place, to the economical crisis through which the country is passing. In the second place, it may be attributed to the reduction of rate of interest paid by the post-office savings bank from $3\frac{1}{2}$ to $3\frac{1}{4}$ per cent., which took place in 1887, and lastly, to the rumor prevailing in different provinces of the Kingdom that the Government intended temporarily to forbid the repayment of deposits. There is no doubt that this calumny was spread for the purpose of diverting payment of savings from the post-office to some local private savings bank. It is further possible that certain unsound political theories were at the root of the matter. The administration of the post-office savings bank did not think it expedient officially to contradict the false rumor. The only measure it took with a view to putting a stop to it consisted in an order to its offices not to put the slightest difficulty in the way of applications for the withdrawal of deposits, but on the contrary to effect repayments, whenever possible, on demand. In spite of adverse circumstances the affluence of the public to the post-office savings banks was as considerable in 1887 as in previous years while the amount of business transacted was large, as may be seen by the following figures:

In 1887 the number of post-offices having transacted savings-bank business was 4,237; that of deposits, 1,920,545; of withdrawals, 1,069,193; of accounts opened, 288,925; of accounts closed, 109,428. The number of accounts opened thus exceeded that of accounts closed by 179,497. The amount of deposits was 159,417,724 lire. The amount of withdrawals was 146,250,099 lire. The amount of interest added to the principal in the first and second five years' periods since the creation of the bank was 7,226,322 lire. The deposits, inclusive of interest, exceeded the withdrawals by 20,393,946 lire, and the total amount on deposit in the post-office savings-bank reached the sum of 240,235,163 lire.

With the exception of the above-mentioned decrease of 4,000,000 in the amount deposited, all these figures denote sound progress, and the administration of the institution has no doubt that, as soon as these momentary difficulties have been overcome, the business of the bank will again proceed as hitherto on the path of improvement.

In the course of 1887, 140 post-offices were opened for the transaction of savings-bank business, so that at the close of the year the total number of post-office savings banks amounted to 4,237.

The Italian postal administration has succeeded in extending post-office savings-bank service till its sphere of business has become almost identical with that of the postal service, and henceforth the establishment of post-office savings banks will keep pace with the opening of new post-offices.

Out of the 4,237 post-offices in the kingdom empowered to transact savings bank business, 10 effected no transaction, 14 effected only repayments, 352 received less than 1,000 lire, 947 received between 1,000 and 5,000 lire, 686 received between 5,000 and 10,000 lire, 1,539 received between 10,000 and 50,000 lire, 398 received between 50,000 and 100,000 lire, 291 received 100,000 lire and more.

The most important fact resulting from these figures is that there was a further decrease in the number of post-offices at which no transactions were made.

While in 1877 the number of post-offices open to the public for the deposit and withdrawal of savings, which did no business of this kind, was 848, this number decreased, notwithstanding the constant increase in the number of post-office savings banks to 594 in 1878, 282 in 1879, 141 in 1880, 94 in 1881, 53 in 1882, 41 in 1883, 29 in 1884, 21 in 1885, 18 in 1886, 10 in 1887, which is a proof that owing to the extension of the service to small localities at a great distance from the large centers of traffic, its advantages are more valued every day.

Satisfactory results were obtained by the savings banks in the schools of Italy, 5,401 teachers having undertaken the collection of savings. The sum deposited in this manner by 87,764 pupils reached 464,697 lire, and was paid in by the teachers to the post-office savings bank. Deposits were made by one-third of the pupils of

those educational establishments in which so-called school savings banks exist. As compared with the preceding year, all these figures show a considerable increase, which permits of the conclusion that the teachers recognize more and more the utility of the school savings bank which—if well managed and kept within proper limits—must certainly be considered as a powerful means of education.

From a general point of view, the position of the Italian post-office savings bank may be summed up as follows: This beneficent institution, in spite of the difficult conditions with which it has to contend, extends its sphere of business from year to year, gains more friends every year, and is a powerful means of promoting the prosperity of the Italian people in general, and of the working classes in particular.

EXHIBIT 3.

OPINIONS OF PREVIOUS POSTMASTERS-GENERAL.

HON. J. A. J. CRESWELL—1871.

The Post-Office Department is now prepared to undertake the organization and management of the telegraph in connection with its other duties. Indeed, I believe that the Department itself can aid materially in raising the money needed for the purchase through post-office savings banks, if Congress will authorize their establishment. The security of the Government being the best that could be obtained, many depositors would give it the preference over every other. By paying 4 per cent. interest, at the most, on deposits, a large fund could be readily accumulated and invested, under the direction of the Treasury Department, in the public securities. The proceeds of these investments could be used to reimburse the original purchase-money and all other expenditures for construction and repairs.

To prove the feasibility of this plan, I recur to the history of the British office. Savings banks in connection with post offices were established in Great Britain on the 16th of September, 1861, with a limitation in the law creating them that they should not pay exceeding 2½ per cent. interest on deposits. The following table will show with what rapidity and to what extent they have been intrusted with the money of the people:

Period.	Number of post-office savings banks.	Number of deposits.	Amount of deposits.	Total sum standing to credit of post office savings banks on books of national debt commissioners at close of the year.	Balance in hands of post-master-general, after allowing for charges of management, at close of the year.	Total balance in hand applicable to payment of depositors at close of the year.
From Sept. 16, 1861, to Dec. 31, 1862.....	2,535	639,216	£2,114,669	£1,659,032	£35,692	£1,694,724
Year 1863.....	2,991	842,848	2,651,209	3,328,182	44,413	3,372,595
1864.....	3,081	1,110,762	3,350,000	4,995,663	5,522	5,001,185
1865.....	3,321	1,302,309	3,719,017	6,582,329	4,327	6,586,656
1866.....	3,507	1,525,871	4,400,657	8,231,176	25,791	8,256,967
1867.....	3,629	1,592,344	4,643,906	9,867,703	47,690	9,915,393
1868.....	3,813	1,757,303	5,333,638	11,963,053	Nil.	11,899,400
1869.....	4,047	1,998,644	5,787,218	13,755,547	19,386	13,774,933
1870.....	4,082	2,135,993	5,995,121	15,305,040	158,888	15,463,928

The total amount in hand after 10 years' operations, and for which the British Government pays only 2½ per cent. interest, is £15,463,928, or \$75,145,690—a much larger sum than will be required for the purchase and thorough repair of all the telegraphic lines in the United States.

Convinced of the wisdom of establishing the postal telegraph and post-office savings banks in this country, I earnestly recommend the passage by Congress of the laws necessary therefor,

HON. J. A. J. CRESWELL.—1872.

Post-office savings banks have been in operation in the United Kingdom since the 16th of September, 1861, and have steadily grown in popular confidence and favor. During the year 1871 the number of depositors increased 120,000, and the amount of deposits nearly £2,000,000. The total number of depositors is now 2,362,621, and the total sum standing to the credit of the post-office £17,303,815, or about \$84,000,000. These figures show conclusively the utility of postal savings banks; and I renew my recommendation of last year for their establishment in this country.

HON. J. A. J. CRESWELL—1873.

The events of the past few weeks have awakened a lively interest in a plan heretofore submitted for securing the savings of the great body of the people by a pledge of the credit and faith of the United States. In my reports for 1871 and 1872 I urged the organization of institutions for that purpose, under the title of "Post-Office Savings Banks." The name was not well chosen. The institutions I have in view and recommend are not designed, and should not be permitted, to encroach upon the legitimate powers and duties of the national banks. They are totally distinct from the banks in their scope and character, in the machinery they employ, and in the ends they are intended to accomplish, and may be more accurately designated as postal savings depositories of the United States.

The financial difficulties in which the country has been unexpectedly involved, and which still continue to oppress it, have demonstrated the necessity for some means of maintaining confidence in times of threatened disaster, and of gathering and wisely employing the immense wealth scattered among the people, to prevent panic and escape the ruin which inevitably follows in its track. That the people of the United States hold the reins of financial as well as political power clearly appears from the following tables taken from the public debt statements, reports of the national banks and from official accounts:

Treasury notes of all kinds, including fractional currency, in the Treasury, in the national banks, and in the hands of the public on June 30, 1869, 1870, 1871, 1872, and 1873.

Date.	Aggregate.	In the Treasury.	In national banks.	In the hands of the public.
June 30, 1869.....	\$388, 118, 859. 73	\$37, 097, 818. 89	\$82, 738, 974. 53	\$268, 282, 066. 31
June 30, 1870.....	395, 984, 940. 48	28, 945, 067. 19	96, 758, 465. 39	270, 281, 407. 90
June 30, 1871.....	396, 679, 380. 06	9, 533, 363. 15	124, 298, 373. 22	262, 847, 643. 69
June 30, 1872.....	398, 444, 131. 52	15, 321, 689. 87	125, 063, 881. 12	258, 058, 560. 53
June 30, 1873.....	432, 609, 332. 94	*41, 513, 529. 77	108, 204, 050. 84	282, 891, 752. 33

*Thirty-one million seven hundred and thirty thousand dollars of the currency in the Treasury June 30, 1873, represents special deposits for redemption of certificates of deposit issued under act of June 8, 1872, which certificates are held by the national banks as part of their reserve of lawful money.

National bank notes held by the banks and the public on June 30, 1869, 1870, 1871, 1872, and 1873.

Date.	Aggregate.	On hand.	In the hands of the public.
June 30, 1869.....	\$299, 742, 474. 95	\$17, 915, 295. 95	\$281, 827, 179. 00
June 30, 1870.....	299, 267, 486. 35	23, 056, 596. 35	276, 210, 890. 00
June 30, 1871.....	317, 616, 919. 20	26, 101, 252. 20	291, 515, 667. 00
June 30, 1872.....	337, 240, 692. 30	23, 162, 340. 30	314, 078, 352. 00
June 30, 1873.....	346, 777, 827. 30	26, 432, 588. 30	320, 345, 239. 00

Recapitulation of currency in the hands of the public.

Date.	Treasury issues.	National bank notes.	Total.
June, 1869.....	\$268, 282, 066. 31	\$281, 827, 179. 00	\$550, 109, 245. 31
June, 1870.....	270, 281, 407. 90	276, 210, 890. 00	546, 492, 297. 90
June, 1871.....	262, 847, 643. 69	291, 515, 667. 00	554, 363, 310. 69
June, 1872.....	258, 058, 560. 53	314, 078, 352. 00	572, 136, 912. 53
June, 1873.....	282, 891, 752. 33	320, 345, 239. 00	603, 236, 991. 33
Aggregate for 5 years			2, 826, 338, 757. 76
Average			565, 267, 751. 55

On the 30th of June last the public held, independent of the Treasury and the banks, \$603,236,991.33. The amount of currency was then considered sufficient for all business purposes. In the month of August following, a stringency began to be felt in the money market, and we have since witnessed the extraordinary spectacle

of the banks suspending and declaring their inability to pay United States notes or bank notes, or even fractional currency, to their depositors. Of course, under such circumstances, they could not continue to make their usual discounts for the accommodation of their customers. This can only be accounted for upon the theory of a general lack of confidence on the part of the people, and a consequent refusal to deposit, or invest, or even pay out in discharge of obligations the currency held by them. To meet this strange state of affairs, and to prevent a recurrence of the like in the future, many plans have been suggested—one involving an expansion of the currency, another compelling a return to specie payment, and still another providing for the issue by the Government of a convertible bond at a low rate of interest—but all open to objections more or less serious. The opinion is universal that if there could be a general restoration of confidence there would immediately be let loose an ample circulation for the entire country. If, therefore, a plan can be devised that will afford to depositors equal security to that afforded to note-holders, but little doubt can be entertained that a general amelioration of the present condition will be effected. The immense sum of \$600,000,000 held by the people in June last, with the large accessions since made thereto by heavy drafts upon the Treasury and the banks, will be brought out from its place of concealment and applied to its legitimate work of aiding in forwarding our crops and products to market and in sustaining our vast manufacturing and other business interests.

In my judgment, a system of postal savings depositories would powerfully contribute to this most desirable consummation. Throughout the plan for their organization and work two ideas predominate: first, the United States is to insure the safe return of principal and interest whenever demanded; and, secondly, the extensive machinery of the Post-Office is to be used to bring its advantages home to the great mass of the people. The details would be simple, safe, and efficient. Money-order offices, as agents of the Government, would receive deposits in small sums, ranging from one dollar upward to the limit fixed by law, which sums the postmaster would forward at short intervals to the nearest depository of the United States Treasury. A certificate, fixing the responsibility of the Government, would be issued immediately to the depositor by the postmaster, and notice thereof would be sent either to the Department or some established branch office, to the end that due entry thereof might be made and a more formal acknowledgment forwarded to the depositor. No depositor should be allowed in any one year to deposit exceeding \$300; no greater accumulation of deposits should be permitted for any one depositor than \$1,000; and no greater accumulation of deposits and interest should be allowed than \$1,500.

Meantime, however, the United States should contract to pay interest not exceeding 4 per cent., to be computed from the first day of the month following the deposit, and to stop upon the first day of the month in which any withdrawal might be made. Interest should be computed to the end of the fiscal year, and then, if not drawn, should be added to the principal. It would of course be necessary to keep an exact account of all such deposits, and of the expenses incident to the management thereof, in the Treasury Department; also to make provision for the payment of the amounts due depositors whenever and wherever they might desire to withdraw them; and to allow and credit to such accumulations a somewhat greater rate of interest than that paid depositors, so that all expenses might be paid out of the fund and the institution made self-sustaining. I am confident that the plan of operations thus generally sketched may be so amplified and guarded that the people could be efficiently served, and the Government saved from all loss or expense.

The great ends to be attained are, first, absolute security; secondly, the utmost facilities for deposits, withdrawals, and transfers; and thirdly, perfect secrecy. A system thus organized and conducted would not only encourage economy and habits of saving on the part of all who might be in the way of earning small sums of money, but would tend largely to utilize and keep in circulation the immense amounts which are paid out for wages and in business, and give every depositor a direct interest in the stability of the Government. It would strengthen our national finances by pouring these accumulations into the Treasury, which, in turn, by judicious investments, could afford to monetary and banking institutions the very relief they now so eagerly seek. Thousands who doubt the security of the banks and savings institutions, whether private or organized under State laws, would cheerfully place their surplus money upon such terms in the keeping of the Government.

The extent of the benefits which will inure to the people and the Government from the establishment of this system will be best indicated by a statement of the amounts deposited in existing savings banks in some of the States of the Union. With the means of information at my command, I am able to make only a partial statement under this head. Congress wisely provided by the act of February 19, 1873, for an annual report to be made by the Comptroller of the Currency of the condition of all banks, banking companies, and savings banks organized under the laws of the several States and Territories; but, on application to that officer, I have been informed that he has not yet succeeded in collecting the information necessary for such a report,

and that in many of the States and Territories no returns are made by the savings banks, either to the legislature or any State officer, and that thus they are left without any supervision whatever. I regret that I shall be deprived for the present of the experience and industry which will doubtless be applied to the discharge of the duty imposed by the law referred to.

In the table following, the returns for Massachusetts are brought up to the 26th of October, 1862; for Rhode Island, Maine, and New Hampshire, to the year 1869-'70; for Connecticut, to January 1, 1871; for the State of New York, to January 1, 1873; and for California, to July 1, 1872:

State.	No. of sav- ings insti- tutions.	Number of depositors.	Amount depos- ited.	Average to each depos- itor.
Massachusetts.....	172	630, 246	\$184, 797, 313. 92	\$293. 21
Rhode Island	25	67, 238	27, 067, 072. 00	402. 55
Maine.....	36	39, 527	10, 490, 368. 00	265. 40
New Hampshire	45	71, 536	18, 759, 461. 00	262. 25
Connecticut.....		178, 000	55, 000, 000. 00	310. 00
New York	150	822, 642	285, 286, 621. 00	346. 79
California.....		58, 713	47, 784, 372. 00	.....
		1, 867, 802	629, 185, 207. 92	

Thus seven States had, many months ago, 1,867,802 depositors, and \$629,185,207.92 on deposit, an amount greater by \$3,476,930 than all the deposits, including those of individuals, the United States, and United States disbursing officers, held by all the national banks of the United States, numbering 1,919, on the 3d day of October, 1872.

Objection has been made to the establishment of postal savings depositories upon the ground that they would interfere with and overthrow the present savings banks. I respectfully submit that this objection is without foundation. Savings banks were originally established by the benevolent and philanthropic to provide safe places of deposit for the small savings of laboring people, and in the beginning they were conducted without hope of either profit or reward other than that which comes from the consciousness of doing good. In so far as they have since been used for purposes of speculation, their managers have diverted them from their original design, and to that extent have abused the confidence reposed in them. Security is to be sought above all other considerations, and hence the spirit of speculation should be thoroughly eradicated from their administration. If savings banks are subjected to risks and prostituted for purposes of gain for their managers, they should be overthrown. If, on the contrary, they continue to be well and profitably managed, and pay a greater rate of interest than that paid by the Government, they will in nowise be put to disadvantage, because every depositor will be left free to select his place of deposit.

Nor can the national banks raise a valid objection. They are organized to afford facilities to the community by lending money on personal security, dealing in exchange, issuing notes, and receiving deposits, not for permanent investment, but as temporary custodians. Bankers should own the capital they employ. When they attempt to do business on borrowed capital they are operating on a fictitious credit and become mere speculators. If they succeed in realizing more interest than they pay they make a profit by raising the price of money above its value. If they do not succeed in so doing, then, like other unfortunate speculators, they fail, and their creditors become their dupes. Hence a law prohibiting the payment of interest by the banks would simply confine them to their legitimate business, and prevent them from assuming improper risks. With the Government it is totally different. Its obligations must be met by resorting either to loans or taxation, and in determining its choice of alternatives, the paramount consideration should be the best interests of the people, whose agent it is. Sound policy dictates that the Government should lose no opportunity of borrowing from its own people, at a low rate of interest, for the purpose of discharging an indebtedness abroad, or relieving industry and enterprise at home from the trammels of taxation. But when the Government can arrest panic, restore confidence, call forth the hoarded treasure of the country, and revive the pursuits of industry, by a simple pledge of the people's credit for the people's security, who will say that that pledge should not be given?

Another objection is the tendency to centralization. To this I answer, that, if to establish postal savings depositories would be in violation of the Constitution, there is an end of the matter at once. If, on the contrary, such action would not be unconstitutional, then the only question is whether their establishment would on the whole be advantageous for the people and the Government. Since the national Government has assumed to organize and control the banking of the country, and has found

warrant of law for undertaking the transmission of the people's money through the mails, it would appear that it is only discharging its whole duty and completing its financial work by providing for the safety of the small savings of the industrious and frugal poor. If, in addition, it can be shown that postal savings depositories will serve to fortify the national credit, make more equable the financial operations of the country, cultivate habits of thrift among the industrial classes, and illustrate the excellence of our institutions by protecting and augmenting the accumulations of self-denying toil, and thus in time merging the workman into the capitalist, the cry of centralization can not be made to drown the voice of the people in their demand that the Government of the United States shall execute for their benefit the high offices enjoined upon it by the Constitution.

Another objection, more practical, if not more tenable, is based on an alleged increase of expenses and public officers. So far as the establishment of savings-depositories would have any effect upon appointments, its tendency would be to secure a better class of officers in all respects. None but competent persons could discharge the duties of such institutions, and no man or party having a reputation to sustain would be willing to commit interests so important to unworthy hands. The Government would seek its principal agents and employes among experienced men wherever they could be found. A numerous force of additional officers would not be required. Many persons already employed in the postal service could be made to discharge a portion of the required duties. A force far less than that now needed in savings banks would be sufficient, with the assistance of the machinery of the post-office, to accomplish the same amount of work, and this, together with a supervising bureau in the Post-Office Department and the necessary accounting officers in the Treasury, is all that would be needed. The fact that the money-order office during the past year received transmitted, and paid out nearly \$60,000,000, shows how well that branch of the Post-Office discharges its duties. I am entirely satisfied that the character of the service would be elevated, and the work more cheaply and better done by Government officers, controlled at every step by law, and punishable by severe penalties in case of default or embezzlement, than is possible under the present irresponsible and inefficient mode in which savings banks are conducted in many of the States.

But the argument by example is, perhaps, the most powerful. Let us, then, invoke the experience of other nations. The savings bank, like many other products of Christian civilization, was perfected piecemeal. An institution of a kindred character was founded at Hamburg as early as 1778, and first gave a demonstration of the power of small sums contributed by many when aggregated, though, it is stated, its operations were confined to the granting of deferred annuities. An institution approaching nearer to the savings bank, it is generally believed, was formed at Berne, Switzerland, in 1787. The idea, however, was fully developed in England, and the honor of its first practical application is divided among several persons, all of whom may claim to be benefactors of their race. In the year 1798 a friendly society for the benefit of women and children was established under the superintendence of Mrs. Priscilla Wakefield, and before the year 1801 there had been combined with its main design a twofold improvement, namely, a fund for loans and a bank for savings. In 1804 the savings bank was more regularly organized, and Mr. Eardley Wilmot, M. P., and Mr. Spurling were appointed trustees. A prior claim, however, is raised on behalf of Rev. Joseph Smith, of Wendover, who, in 1799, circulated in his parish proposals to receive deposits during the summer and return the amount at Christmas with an addition of one-third as a bounty.

The first publication in England of the idea of savings banks, under the name of frugality banks, is also attributed to the celebrated Jeremy Bentham as early as 1797. The society next formed was opened, in 1808, at Bath, chiefly through the instrumentality of certain ladies, who received deposits from female servants. In 1810 the first savings bank in Scotland was formed by Rev. Henry Duncan, minister of Ruthwell, Dumfriesshire, and in November, 1815, the providence institution of Southampton was established, under the patronage of the Right Honorable George Rose. The seeds thus sown rapidly germinated, took root, and soon exhibited a vigorous growth. By the year 1817 there had been formed no less than 70 banks in England, 4 in Wales, and 4 in Ireland by the voluntary association of benevolent persons. Parliament then took up the question, and by two separate acts recognized and organized banks for savings in England and Ireland, and two years later, in Scotland. Thenceforth such institutions were under the protection and guidance of the law, and much labor was expended in the effort to protect them from speculation and fraud; notwithstanding all which, it has been stated by competent authority, that between the years 1844 and 1857 frauds were perpetrated to the amount of £228,800. The effect was disastrous in the extreme. Confidence was destroyed, and the

disposition to economize became a subject of ridicule. Attention is called to the following:

Table showing the amount of deposits and withdrawals and the capital of savings banks, in the United Kingdom at the end of each year from 1841 to 1861, inclusive.

Year ended November 20—	Deposits.	Withdrawals.	Capital of savings banks in the United Kingdom.
1841	£5,694,908	£5,487,723	£24,536,971
1842	5,789,203	5,656,160	25,406,642
1843	6,327,125	5,333,015	27,244,266
1844	7,166,465	5,716,275	29,653,180
1845	7,153,176	6,697,042	30,950,983
1846	7,300,367	7,255,654	31,851,238
1847	6,649,008	9,060,075	30,236,632
1848	5,862,742	8,653,108	28,114,136
1849	6,196,883	6,522,760	28,537,010
1850	6,363,690	6,760,328	28,930,982
1851	6,782,059	6,305,566	30,277,654
1852	7,281,177	6,684,906	31,754,261
1853	7,653,520	7,116,330	33,362,260
1854	7,400,141	7,956,347	33,736,080
1855	7,188,211	7,654,133	34,263,135
1856	7,741,453	8,023,583	34,946,012
1857	7,581,415	8,375,095	34,145,567
1858	7,901,925	7,839,903	36,220,362
1859	9,021,907	7,335,349	38,995,876
1860	9,478,585	8,258,422	41,258,368
1861	8,764,870	9,621,539	41,546,475
Total.....	151,298,830	152,313,312	.....
Excess of withdrawals.....	.....	1,014,482	.....

It is worthy of note that during the years 1847, 1848, 1849, and 1850 the withdrawals exceed the deposits by amounts respectively of £2,411,067, £2,790,366, £328,877, and £396,638, and that in the years 1854, 1855, 1856, 1857, and 1861, also, the withdrawals largely exceeded the deposits. The remarkable fact is also revealed that, taking the whole period between 1841 and 1861, when the increase in population in England and Wales was 4,190,496, when the exports increased from £51,545,116 to £125,102,814, and when the amount of wages paid must have been largely increased, the withdrawals actually exceeded the deposits by £1,014,482. The commercial crisis of 1847-'48, and the scarcity of money during the Crimean war, had, no doubt, a marked effect during some of the years recorded in the foregoing table; but the general result can be accounted for on no other theory than that the confidence of the masses had been weakened by the discovery of the enormous frauds above mentioned, the knowledge of the defects of the system, and the divided responsibility under which it was worked.

It thus became apparent that a radical reform must be effected, otherwise the usefulness of savings banks would be seriously impaired. After numerous failures a project for post-office savings banks was finally brought to the attention of Sir Rowland Hill, who gave it his cordial approval. A plan having been finally matured by Mr. George Chetwynd, and approved by Mr. Frank Ives Scudamore, fixing the rate of interest at $2\frac{1}{2}$ per cent., it was carried through Parliament under the powerful championship of Mr. Gladstone, and became the law of the land on the 17th day of May, 1861. The details being approved, and the necessary machinery provided, it went into effect on the 17th day of September following. The annexed table, covering its operations from that date until the 31st day of December, 1872, proves its steady and uniform growth and its triumphant success.

Operations of the British post-office savings banks.

Period.	Number of post-office savings banks.	Number of deposits.	Amount of deposits.	Total sum standing to credit of post-office savings banks on books of national-debt commissioners at close of the year.	Balance in hands of post-master-general after allowing for charges of management at close of the year.	Total balance in hand applicable to payment of depositors at close of the year.
From Sept. 16, 1861, to—			£	£	£	£
Dec. 31, 1862.....	2, 535	639, 216	2, 114, 669	1, 659, 032	35, 692	1, 694, 724
1863.....	2, 991	842, 848	2, 651, 209	3, 328, 182	44, 413	3, 372, 595
1864.....	3, 081	1, 110, 762	3, 350, 000	4, 995, 663	5, 522	5, 001, 185
1865.....	3, 321	1, 302, 309	3, 719, 017	6, 582, 329	4, 327	6, 586, 656
1866.....	3, 507	1, 525, 871	4, 400, 657	8, 231, 176	25, 791	8, 256, 967
1867.....	3, 629	1, 592, 344	4, 643, 906	9, 867, 703	47, 690	9, 915, 393
1868.....	3, 813	1, 757, 303	5, 333, 638	11, 963, 053	Nil.	11, 899, 400
1869.....	4, 047	1, 998, 644	5, 787, 218	13, 755, 547	19, 386	13, 774, 933
1870.....	4, 082	2, 135, 993	5, 995, 121	15, 305, 040	158, 888	15, 463, 928
1871.....	4, 335	2, 362, 621	6, 664, 629	17, 303, 815	166, 456	17, 470, 271
1872.....	4, 607	2, 745, 245	7, 699, 916	19, 559, 804	301, 070	19, 860, 874

Every year shows an increase in the number and amount of deposits; and on the 31st day of December, 1872, the total balances applicable to the payment of depositors amounted to the sum of £19,860,874. The postmaster-general states, in his last annual report, that the cost of each deposit or withdrawal, including postage, is now about sixpence instead of about one shilling in the old savings banks. No greater triumph was ever achieved in post-office management, with the single exception of that of Sir Rowland Hill, in effecting penny postage.

Post-office savings banks encountered at every step the most implacable opposition, and were established only after a prolonged struggle. The same arguments were brought to bear against them that have been used against the adoption of a like system here. It was urged that they would be destructive of the old savings banks; that the post-office would never be able to perform the additional important duties imposed upon it; that the Government was undertaking a great risk; and that the scheme was centralizing in its tendency. They were opposed by Lord Colchester, an ex-postmaster-general, and by Lord Monteagle, of Brandon, once chancellor of the exchequer. A practical trial of twelve years has conclusively established the fallacy of all the arguments adduced against this beneficent measure.

The same system, somewhat simplified, has been put into operation in the British Australian colonies, in Queensland, and in Canada, with like unvarying success. Mr. J. C. Stewart, superintendent of the post-office savings banks of Canada, writes, under date of October 25, 1873:

"Post-office savings banks work smoothly with us. We commenced five and a half years ago very much in the dark, and we have had to work out the system to a great extent unaided; but we learned to think out and reason out a system with which we are now well satisfied. There is nothing which prevents our extending it to every money-order office, save want of office accommodation at the head office."

Reason and philanthropy being thus sustained by the prolonged experience of so many people speaking the English language, how can the success of similar institutions in the United States be longer doubtful? I believe that the financial perils through which we are now passing could have been mainly averted if these institutions had been open to receive deposits. The people of this country earn more and deposit more than those of any other. The State of New York alone exhibits an aggregate of savings-bank deposits equal to those of the whole United Kingdom of Great Britain and Ireland; and it is not extravagant to say that if the spirit of the universal frugality could be encouraged by an assurance of good faith and absolute security, the savings of the American people would soon grow into such gigantic proportions that the voluntary loans of a single generation would exceed the whole of the national debt.

I am clear in the conviction that the establishment of postal savings depositories will be found an eminently wise and practical measure; and, in the hope of contributing something to that end, I will submit at an early day a form of bill embodying the necessary legislation.

HON. HORACE MAYNARD—1880.

POSTAL SAVINGS.

One of my predecessors some years since recommended the incorporation into the department of a system of postal savings. The subject has from time to time occupied the attention of Congress. For several years the system has been in operation in the United Kingdom of Great Britain and Ireland, and in Canada. When in London recently, Her Majesty's postmaster-general kindly gave me facilities for observing the management of his department. I learned that the postal savings system had been remarkably successful, and had constantly grown in popular favor. As managed in that country, it is a source of some profit to the Government.

In this country I incline to the belief that the system would have advantages even greater than in a compact population like that of Great Britain. The subject will be found intelligently discussed by a gentleman connected with the money-order office upon page 379, of the appendix.

Wealth, public and private, consists largely of the savings of production over consumption, small in detail, but enormous in the aggregate. In by far the larger portion of the United States there are no savings depositories, and are not likely to be. To the people of these parts the use of the post-office for this purpose would be a real boon. It would be an additional advantage that deposits would be available at any depository office in the United States, an important consideration with a people so migratory as ours. It is believed the system would interfere little with the business of the savings banks, but would absorb funds not now deposited in them. Nor would the patronage of the Government be sensibly increased, since the system would be operated by persons already in the public service, with no considerable addition to the number. Your attention and the attention of Congress is respectfully invited to it.

HON. T. L. JAMES—1881.

POSTAL SAVINGS DEPOSITORIES.

As early as 1871 a recommendation was made by one of my predecessors for the establishment of a system of savings depositories in connection with this Department, and in several subsequent annual reports this recommendation has been renewed.

December 18, 1873, "A bill to establish and maintain a national savings depository as a branch of the Post-Office Department" was introduced in the House of Representatives by Hon. Horace Maynard, of Tennessee. From time to time since that date the measure has occupied the attention of Congress, and many bills have been introduced, but without securing definite action.

A system of post-office savings banks went into operation in Great Britain September 16, 1861. At the close of its first complete year, the number of open accounts was 178,495, and the amount standing to the credit of depositors was £1,698,221, being an average of £9 10s. 3d. to each account. Since that time the institution has grown rapidly in popular favor, and on the 31st of December, 1879, the number of outstanding accounts had risen to 1,988,477, and the amount of the credit of depositors to £32,012,134, an average of £16 1s. 11½d. to each. The interest paid to depositors is only 2½ per centum, a rate so low as practically to exclude the post-office savings banks from competition with other banking institutions, as the history of the rise and progress of savings institutions in Great Britain has demonstrated, the object of the government being to offer to the depositor security rather than profitable investment for his earnings, and to promote frugality, steady habits, and consequent thrift among the laboring classes.

My predecessor, in his last annual report, said that in the larger portion of the United States there are no savings depositories, and are not likely to be; and he expressed the opinion that, to the people of these parts, the use of the post-office for this purpose would be a real boon. That it would be an advantage to the patrons of the institution, that deposits would be available at any depository post-office in the country, "an important consideration with a people so migratory as ours." He further expressed the belief that the system would interfere little with the business of the savings banks, but would rather absorb funds not now deposited in them. He thought that the patronage of the Government would not be sensibly increased, since the system would be conducted by persons already in the public service, with no considerable addition to their number.

In these views I concur. It is my earnest conviction that a system of this description, if adopted, would inure more than almost any other measure of public importance to the benefit of the working people of the United States, and I commend it to the favorable consideration of Congress.

HON. T. O. HOWE—1882.

POSTAL SAVINGS BANKS.

I follow in the steps of many of my predecessors in this office when I invoke Congress to make one more effort to ingraft upon the postal service a system of deposits for small sums. The great lesson our people need to learn is that of economy. The American people are apt to earn but are not wise to save.

The easy introduction to the art of saving is to provide a convenient and safe means of saving. A lucrative means is less essential. A place near at hand where a dollar may be deposited and may be secure against the temptations of the burglar, the thief, and the saloon keeper, even if it accumulates but very little, has everywhere proved a strong inducement to saving. The post-office is near to every citizen; the savings bank must always be remote from the most. The post-office need not be a substitute for the savings bank, nor its rival, but its feeder; a place where small deposits with slow accretions may securely grow into large ones, then to be transferred to savings banks on longer terms and with larger earnings.

FROM THE REPORT OF THE POSTMASTER-GENERAL—1889.

POSTAL SAVINGS BANKS.

If the letters and arguments presented at the Department and articles in the newspapers are an evidence of interest in this subject there is a steadily growing sentiment in favor of the Government offering through the post-offices a depository for savings. Foreign countries have for many years past extended these conveniences for the people and good results are reported without exception.

The report of the Postmaster-General of Great Britain for 1889 says:

The growth of business in the savings bank has been exceptionally rapid during the year 1888. * * * The deposits in the year numbered 7,540,625, amounting to \$95,261,130, as against 6,916,327 and \$82,679,660, the number and amount for the year 1887. The withdrawals were 2,633,808 in number, amounting in all to \$79,013,675, showing an increase of 137,514 in number and of \$5,612,280 in amount over the number and amount for 1887. As a net result of these transactions, a total sum of \$292,781,970, including interest, remained to the credit of depositors on the 31st December, 1888, being an increase of \$22,911,645 for the year as compared with an increase of \$15,498,635 in 1887. The amount of interest credited to depositors was \$6,664,190 or \$443,820 more than in 1887.

The greatest number of deposits on one day was 60,936, amounting to \$907,445, and made on the 31st December. The greatest number of withdrawals on one day was 20,348, amounting to \$446,985, made on the 18th December. The average amount of each deposit was £2 10s. 6d., as compared with £2 7s. 10d. in 1887. * * * The average amount of each withdrawal was £6, as compared with £5 17s. 7d. in 1887.

The number of accounts opened in 1888 was 887,460 and 618,294 were closed. The corresponding numbers for 1887 were, respectively, 794,592 and 574,252. The total number of accounts open at the end of the year was 4,220,927, distributed as follows:

	Number.	Proportion to population.	Average balance due to each depositor.
England and Wales	3,900,334	1 to 7	£ s. d. 13 17 3
Scotland	148,288	1 to 27	8 8 11
Ireland	172,305	1 to 28	18 15 4

“The total number of post-offices open for the transaction of savings-bank business on the 31st December, 1888, was 9,022, or 302 more than in 1887, of which 254 were opened in England and Wales, 28 in Scotland, and 20 in Ireland.”

The fact that over four millions of persons (4,220,927) in the kingdom of Great Britain alone take advantage of this means of security and saving is certainly significant. Not less so is the sum of nearly three hundred million of dollars (\$292,781,070) to the credit of the depositors on January 1, 1889. But the amount of self-reliance, thrift, and good citizenship encouraged by this feature of the Government is beyond any calculation.

To connect more intimately countless numbers of citizens with this country is a patriotic service. It would tend to weaken incipient disturbances; it would aid in breaking down sectional feelings. The State and private savings banks in many of

the States where small deposits can be made are comparatively few in number. In some parts of the country there are no such opportunities offered. The chimney corner, the trunk, the closet, and the old stocking hide another surplus, not unlike that heaped up in the Treasury; and practically it is as much withdrawn from circulation. To offer needed security to these millions striving to be provident, to encourage other millions now thoughtlessly improvident, and bind closer to the nation all those who are benefited—men, women, and children alike—is worthy of the loftiest statesmanship.

The grave question at the threshold is what to do with the money deposited; how to put it into circulation and make it earn an interest. The claim sometimes made that for the Government to take up this business would be an interference with the banks and savings funds will not hold good. I maintain that the habits of saving engendered would be widely felt and increase the savings of all who are already depositors. Besides, but few of the existing institutions can afford to bestow their labor on receiving sums as small as those which the postal savings bank would invite. Fixing a limit to the amount of deposits at \$150 from any one person in one year would tend to turn away from the post-office banks to other banks and savings funds the aggregated deposits as soon as sufficiently large to be desirable to financial institutions.

I suggest early consideration of the question of establishing postal savings banks at 10,000 of the fourth-class offices in towns where such facilities are most needed, leaving the extension of this privilege to be determined after a trial of 2 years. There are three plans: First, to accept limited deposits, upon which interest at the rate of not more than 2 per cent. be paid; second, if objection be made to the Government obligating itself to pay interest, accept deposits with an agreement to invest and distribute their earnings less one-eighth of 1 per cent. for the cost of the service; third, if it is deemed inadvisable to undertake any such obligation, offer the post-offices as depositaries without interest, affording the people the convenience and safety. In each case the Secretary of the Treasury would loan the money, equitably distributing it to the banks in the States where the deposits originated to keep it in circulation, requiring United States bonds as security, and interest, if the Government pays interest, but not otherwise.

The suggestion of a modified plan for small savings is made in case the other plans are disapproved; that authority be given to the Department to redeem for cash, under regulations prescribed by the Postmaster-General, all undefaced postage stamps or postal cards when presented at any post-office on savings cards in multiples of \$1. While this would be the least important of the four schemes, I believe it would find a hearty response among the toiling people, especially the younger and smaller wage-earners.

FROM THE REPORT OF THE POSTMASTER-GENERAL, 1890.

SAVINGS BANKS AT POST-OFFICES.

The Post-Office Department is continually urged to act as the guardian of moneys for people resident in parts of the country where savings banks do not exist. It is not the large cities that feel this need, though even at the populous centers banking institutions generally do not offer convenient hours for working people and do not care to deal with small sums. It is the large mass of wage-earners outside of large cities that clamor for help to keep hard-earned gains. In some of the States no laws exist to give State protection to savings deposited with private capitalists. It is stated on reputable authority that in one portion of the country containing twelve millions of population there are not as many places of deposit for the saving of small sums as exist in a single city of 80,000 people in a New England State.

To teach economy and thrift as leading up to better citizenship falls short if there is no adequate provision for the safe-keeping of savings. Such places ought to be within an hour's walk of the home of every workingman. They can not be left to private capitalists to provide, because it would not pay them to deal in small sums or perform the necessary labor. The post-offices and the postmasters are in every respect rightly situated to do this work. It would be a great comfort to the people to have these banks that could not be affected in times of financial panic.

Of all the great powers in the world the United States and Germany alone are without postal savings systems. The last report of the British authorities shows that on the average 1 person out of every 8 in the United Kingdom is a depositor in the postal savings, and while in England and Wales the average balance to each depositor is almost \$70, in Ireland, where the conditions are harder, the average balance to each depositor is close to \$94, owing doubtless to fewer opportunities to invest or deposit money for safe-keeping.

In Mr. Lacey's report to the Forty-seventh Congress, urging the establishment of

postal savings banks, he quotes as follows from the twenty-sixth report of the postmaster-general of the United Kingdom:

"Notwithstanding the dullness of trade and the deficiency of the harvest that characterized the year 1879, it is satisfactory to report a continued excess of deposits over withdrawals and an increase in the balance due to depositors of upwards of a million and a half sterling. Most remarkable, perhaps, is the progress shown in Ireland, considering the severe distress to which many parts of that country have been subject. For the whole of Ireland there was, including interest, an increase in the balance due to depositors of \$457,915, and of this amount the eight counties chiefly affected by the distress contributed no less than \$127,090."

The Postmaster-General of Great Britain states in his last report that the number of savings bank depositors last year was 8,101,120, an increase of 560,495 persons, and that the total amount of deposits for the year was a fraction under \$100,000,000, nearly \$4,000,000 more than the previous year. In one day over 55,000 persons made deposits amounting to over \$685,000. There were 924,010 new accounts opened in 1889 and 637,128 closed. The total number of open active accounts at the end of the year was 4,507,809, or nearly 300,000 more than the previous year. The report gives interesting data of the growth of the savings system in the British provinces. In Ceylon the system was established in 1885, and "proved a boon to the poorer population."

An interesting statement in the Bankers' Monthly for October says:

"But the greatest extension of savings banks has been brought about by the introduction of the system of post-office banks. In India, as in England, the use of the already existing machinery of the post-office has not only proved of the greatest advantage in point of economy of administration, but has been of the utmost service in extending the opportunity of profitably exercising thrift into many parts of the country where otherwise it would be impossible to afford such accommodations without incurring a cost too great to be borne by the business of the district. * * * In March, 1888, the totals of accounts and balances in the various savings banks were as follows:

	Accounts.	Balances.
		<i>Rupees.</i>
3 presidency banks.....	39,403	11,518,734
12 railway banks.....	12,848	2,296,501
170 military banks.....	18,303	1,473,783
5,966 post-office banks.....	261,157	50,488,357
Total.....	331,711	65,777,375

The last French report at hand is that of 1885, which shows the amount of deposits to be over \$53,000,000. In Belgium the depositors at the close of 1888 had \$50,000,000 to their credit. In the Netherlands the deposits were upwards of \$5,800,000. In Sweden at the close of 1887, the depositors, 59 per cent. of whom were minors, had \$766,430 to their credit. Comparison of the deposits in 1887 with those of 1884 shows an increase of over 100 per cent. A report of the postmaster-general of the Hawaiian Kingdom dated February 11, 1890, shows that that country first had postal savings in 1886, and has now 2,641 depositors with \$909,613 on deposit, against \$477,475 one year before. It would seem as though the United States should not be the last country to offer assistance to the masses of her people struggling to rise by thrift and economy.

I recommend that the Post-Office Department be authorized to establish postal savings banks under regulations formulated by the Postmaster-General; that the said banks be located as follows: (1) In States having no laws regulating savings banks; (2) in any other States upon petition of a considerable number of residents of any one locality; and (3) not more numerous than one post-office for every 10 miles of area; that the interest to be paid depositors shall be fixed by the Secretary of the Treasury at the beginning of each year, and be one-half of 1 per cent. less than the average rate paid to depositors by private bankers; that all postal savings received within a State shall be placed on deposit with the national banks of that State, on application, in such amounts and at such interest as the Secretary of the Treasury shall prescribe, and that all such deposits be declared by special enactment preferred claims against the banks holding them.

EXHIBIT 4.

SUMMARY OF THE EFFORTS TO PROVIDE LEGISLATION ON THE SUBJECT OF POSTAL SAVINGS BANKS.

IN THE HOUSE OF REPRESENTATIVES.

Date.	No. of bill.	Title of bill.	Introduced or reported by—
Dec. 18, 1873	797	To establish and maintain a national savings depository as a branch of the Post-Office Department.	Mr. Maynard.
Oct. 29, 1877	548	do	Mr. Tipton.
Mar. 15, 1878	3848	To promote the refunding of the national debt and the loan of the savings to the United States for that purpose.	Mr. Robbins.
Mar. 21, 1878	3989	To establish a postal savings depository as a branch of the Post-Office Department and to aid in refunding the interest-bearing indebtedness of the United States.	Mr. Waddell.
Apr. 17, 1879	4395	To provide for the deposit of savings in a popular loan and to provide for funding the national debt in home bonds convertible into currency.	Mr. Phillips.
Dec. 16, 1881	850	To establish and maintain a postal savings depository as a branch of the Post-Office Department.	Mr. Money.
Feb. 8, 1882	4198	To establish a postal savings depository as a branch of the Post-Office Department.	Mr. Lacey.
Dec. 11, 1883	812	do	Do.
Do.	897	do	Mr. O'Neill.
Mar. 16, 1886	6746	To establish post-office savings banks as a branch of the Post-Office Department.	Mr. McComas.

IN THE SENATE.

Mar. 13, 1878	917	To promote the deposit of savings and the refunding of the national debt.	Mr. Gordon.
Feb. 24, 1886	1622	To establish a postal savings depository as a branch of the Post-Office Department.	Mr. Miller.

EXTRACTS FROM A REPORT SUBMITTED FEBRUARY 21, 1882, BY MR. LACEY, FROM THE COMMITTEE ON THE POST-OFFICE AND POST-ROADS OF THE HOUSE OF REPRESENTATIVES.

POSTAL SAVINGS DEPOSITORIES.

FEBRUARY 21, 1882.—Referred to the House Calendar and ordered to be printed.

Mr. LACEY, from the Committee on the Post-Office and Post-Roads, submitted the following report (to accompany bill H. R. 4198).

The Committee on the Post-Office and Post-Roads, to whom was referred the bill (H. R. 4198) relating to the establishment of a postal savings depository as a branch of the Post-Office Department, submit the same with amendments, and make the following report:

Since the beginning of the present century the philanthropists of all nations have been earnestly endeavoring to promote the establishment of institutions for savings, and the great and beneficial influence exerted upon the laboring classes for their elevation and improvement, by these agencies, is sufficient proof that their efforts have been wisely directed. To provide safe and convenient institutions for this purpose should be the aim of every wise legislator. Whatever can be as well done by

private enterprise as by the Government should never be entered upon by the latter, and it is far from the purpose of your committee to supersede or interfere with sound banks now or hereafter organized by private enterprise under State authority; but we are of the opinion that private enterprise alone does not, and can not, in this respect, meet the necessities of the industrious poor in any country, and least of all in the United States.

The New England States, having a dense population conveniently clustered about mills and factories, is, in a greater degree than other parts of the Union, supplied with these institutions, averaging 1 to every 9,436 inhabitants, and so long as these banks are well and successfully managed the proposed system will in no degree interfere with their business.

But the remaining thirty-two States have but one savings bank to every 225,000 people. To supply these 46,000,000 people as well as are now those of New England we should need 5,000 savings banks instead of 236, which is the present number.

On the 30th of June, 1881, there were 5,499 money-order post-offices in the United States, and if the Postmaster-General were to designate all of these as subdepositories under this act, the people of the whole country would be no better accommodated in point of numbers than is now the population of New England. It is impossible for private enterprise to supply this want. It is possible for the Government. Its offices are already open at the exact places where this business can be most conveniently transacted; it has in each of these offices a corps of officers especially adapted to the purpose; it has excellent facilities for transporting the deposits to a common center for investment, and is itself a borrower at a higher rate of interest than is to be paid the depositor under this act.

All power under our form of government comes from the people—an aggregation of individual voters. If these are vicious and unthrifty, bad government and finally utter failure must follow. Idleness results in poverty and vice. Industry is promoted by increasing the facility and certainty with which its fruits may be preserved and enjoyed. An industrious, frugal, thrifty man is rarely a bad citizen, and good citizenship insures a wise and stable government.

In the light of these facts, and the great success which has attended the establishment of the postal savings system in other countries, your committee cannot give much weight to objections based upon mere theories—objections which have been repeatedly met and overcome abroad by the stern logic of actual experience.

The bill under consideration provides in substance that none but money-order post-offices can be authorized to receive deposits.

No single deposit can be less than ten cents nor more than one hundred dollars.

No more than one hundred dollars can be deposited by one person within any period of thirty days.

The amount due a depositor is limited to five hundred dollars.

Money deposited is to be immediately forwarded to some Government depository by the postmaster who receives it, and invested by the Secretary of the Treasury in interest-bearing securities issued or guaranteed by the United States, and if these can not be purchased without loss to the depository then in approved State securities.

The account of each depositor is to be kept at the central depository in Washington, where interest at the rate of two per cent. per annum is computed and credited.

All withdrawals are by checks issued under the authority of the Postmaster-General.

The expenses of the system are to be paid from the profits of the business.

Your committee believe the provisions of this bill to be wise, and that by its operations both the depositor and the Government would be mutually benefited. We also believe that this business can properly be conducted by the Post-Office Department. The latter is now engaged in carrying merchandise and selling exchange for the sole purpose of adding to the commercial facilities of the people, while the system hereby proposed will not alone prove a great convenience, but will elevate the standard of citizenship and largely promote the prosperity and happiness of all.

Recognizing the obligations which we as legislators owe to that numerous class upon whose industry, frugality, and resulting virtues the prosperity of our country and the permanence of its institutions must at all times rest, we believe all technical objections which stand in the way of their best interests should be swept aside, and that the welfare of these, the industrious poor, the producing millions of our land, should be given paramount consideration.

We therefore recommend the passage of the bill as amended.

EXHIBIT 5.

IN THE SENATE OF THE UNITED STATES,
December 11, 1890.

Resolved, That the Committee on Post Offices and Post-Roads be, and it is hereby, instructed to inquire into the feasibility and advisability of the enactment of a law creating postal savings banks in connection with all or certain classes of post-offices throughout the country, and to report by bill or otherwise at the persent session.

Attest:

ANSON G. MCCOOK,
Secretary

EXHIBIT 6.

PRESS COMMENTS CONCERNING POSTAL SAVINGS BANKS

1. Favorable to their establishment.
2. Against their establishment.

FAVORABLE TO POSTAL SAVINGS BANKS.

[American Banker, New York, September 6, 1890.]

A FEW WORDS ABOUT POST-OFFICE SAVINGS BANKS.

[Read before the American Social Science Association, by J. H. Thiry, of Long Island City, N. Y.]

The European system of post-office savings banks has recently occupied the attention of the press, reformers, scientists, economists, philanthropists, and even a large number of educators of our country. In 1882 a bill was presented in the legislature favoring their introduction, but for some reason or other it was not approved. "Other time other customs." Eight years or more of experience has probably changed the attitude of the legislature. To-day *ignorance*, *intemperance*, and *improvidence*, according to popular declaration, are the three worst foes to American social progress. Our public schools can cure *ignorance*, a proper education will lessen the follies of *intemperance*, and the habits of thrift and economy, properly taught to our children, will reduce considerably the number of *improvidents*.

Compulsory education will reduce ignorance, as Shakespeare says: "Ignorance is the curse of God; knowledge the wing wherewith we fly to heaven."

Manual training and the lessons of thrift and economy taught to our children will prove a means of reducing intemperance, for "A drunkard's purse is a bottle," and, to quote Bacon: "All the crimes on earth do not destroy so many of the human race nor alienate so much property as drunkenness." The habit of saving inculcated in the scholars according to the system which has been on trial during the last 5 years in the 112 schools of our country, will serve as an incentive to temperance and as a preventive to improvidence. "One hand washes the other, and both the face."

Can the European system of post-office savings banks, with its complicated machinery, its heavy expenses, help us? I do not see it. A close survey of our customs, our form of government, the topography of all the regions of the domain of Uncle Sam, compared with that of the European nations, force the conclusion that on account of the large amount of labor, expense, and inconvenience, its introduction would not warrant an adequate return. However, from a careful examination of all the plans suggested thus far, only two appear to meet the wants of our time and country, and they have been proposed by Hon. Horace J. Smith, of Philadelphia, one of the most earnest and best-informed advocates of the post-office savings-bank system in America. In a contribution to the Statesman of Chicago, Ill., Mr. Smith's outline of the plans runs as follows:

First plan.—"That the savings of the people, deposited at the post-offices, instead of being centralized in the Treasury in Washington, should remain in the State in which they originate." * * *

Second plan.—"That the savings of the people, deposited at the post-offices, should be transmitted to the nearest national or savings bank, under the particular scrutiny of the Government to preclude almost any possibility of loss." * * *

According to my view the second plan is the one that will be found the most satisfactory, without entailing great labors, inconvenience, and expense, and the one which, above all, would most readily meet with popular acceptance. In the localities where savings banks could not possibly be established the post-offices would become an agent for the receipt and transmission of the savings of the people and be the intermediary agent between the teachers and the regular banking institution which would accept the totals.

In case such a plan should receive the approbation of all concerned, the next thing needed is a reduction of the usual rates for transportation of the funds (deposits and withdrawals) from one place to another. From the writer's experience and that of many of those with whom he has been in correspondence during the last four years, the practical working of the plan, under a wise code of legislation, would prove a great boon for those dwelling in sections where the art of saving is unknown. Those of us who have seen this system in operation and studied its results trust sincerely that our legislators will soon recognize the wisdom of sanctioning its adoption in our own country.

The rules and regulations of the school savings-bank system will be published in full in a future issue of *The American Banker*. Parties interested and desiring copies of same are requested to send in applications to this office at an early date.

[Indianapolis News, Sept. 30.]

Penny-savings institutions are to be established in Boston on a plan essentially the same as the British Postal Savings Bank. The purpose is to afford the poor a convenient means of saving small sums. No interest will be paid, as the income from such investments as can be made will not be larger than the expense of handling the funds. The benefits to be derived from the system are largely more than the money that can be saved. That is not likely, in any case, to grow into a sum sufficient to more than tide the depositor over some short period of misfortune. The inculcation of the habit of saving is the important thing. It develops thrift and is the surest way of checking pauperism. The person who learns to save has learned the first lesson of success. All the knowledge that can be gained from schools and colleges is not, to the person who must be self-dependent worth as much as knowledge of how to save and the habit of doing it. It is the foundation of all fortunes. It is the best safeguard against intemperance and immorality. The savings institutions, among which we count in Indianapolis the building and loan associations, have done as much, if not more, to check the drinking habit than the temperance movements. Throughout the world it will be found that, in those countries where there is frugality, there is also the highest average of morality.

[Defiance (Ohio) Crescent, October 1, 1890.]

The question of post-office savings banks is an interesting one, and the plan is destined, no doubt, to be adopted in this country. Japan will teach us something when we begin, for, according to an article in a native journal, they were established by the Government in 1875, with the object of encouraging thrift and to collect the small sums scattered about in private keeping. At first they attracted so little attention that at the end of 1875 there were only 2,000 depositors, with \$15,320 lodged. Henceforth, however, the figures increased at a remarkable rate. In 1876 the deposits amounted to \$41,845, in 1882 to \$1,058,000, in 1882 to \$9,050,000, and in 1889 to \$20,451,000. In Tokio the number of depositors is 356,000, and the amount of their deposits is \$10,400,000. It is believed that the poorest people are not depositors, inasmuch as during the recent distress, due to comparative failure of the rice corn, the bulk of the deposits has undergone no diminution.

[Camden (N. J.) Gazette, October 4, 1890.]

Postal-savings banks are a means by which the Government offers through the post-office a depository for savings. To every citizen of the country, no matter where he may reside, provided he is within reach of some post-office which is a depository, the Government extends the opportunity to lay by his savings in small sums, allows interest thereon, and pledges its credit as security for their repayment on demand of the depositor or his representative.

They are not intended to interfere with or be a substitute for existing savings institutions, which for the most part deal with much larger sums and are found only in the larger centers of population, and chiefly in New England and the Middle Atlantic States, but to extend a privilege similar to that which private institutions afford to the very large class of small wage earners, many of whom live entirely out of reach of such institutions—on the principle that if saving and a place where what is saved can be kept in safety are good for some people they are good for all, and that the Government, being security, if anything in the country can be, and having already its "posts" established all over the land, should be the agent to furnish such facilities to its people.—*Youth's Companion*.

[Lowell (Mass.) News, October 6, 1890.]

PENNY SAVINGS.

Penny savings institutions are to be established in Boston on a plan essentially the same as the British postal savings bank. The plan is an admirable one. The purpose is to afford the poor a convenient means of saving small sums. No interest will be paid, as the income from such investments as can be made will not be larger than the expense of handling the funds. The benefits to be derived from the system are largely more than the money that can be saved. This is not likely in any case to grow into a sum sufficient to more than tide the depositor over some short period of misfortune. The inculcation of the habit of saving is the important thing. It develops thrift, and is the surest way of checking pauperism. The person who learns to save has learned the first lesson of success. All the knowledge that can be gained from schools and colleges is not, to the person who must be self-dependent, worth as much as knowledge of how to save and the habit of doing it. It is the foundation of all fortunes. It is the best safeguard against intemperance and immorality.

The savings institutions, among which we count in Lowell, the building and loan association, has done as much, if not more, to check the drinking habit than the temperance movements. Throughout the world it will be found that in those countries where there is frugality, there is also the highest average of morality.

[Philadelphia Press, October 10, 1890.]

THRIFT WITH THE PENNIES.

[From the Boston Herald.]

The system of penny savings banks in schools is especially popular in Pennsylvania, where it includes the schools of Pottstown, Norristown, Chester, and Wilkes Barre. It has even spread to McCook, Lincoln, and Juniata, in the far-off Nebraska, Orangeburgh in South Carolina, and Harrisonburgh in Virginia. Capt. R. H. Pratt has incorporated it into his training school for Indians at Carlisle, Pa.

To sum up the development of this idea, in May, 1890, there were in the United States 114 schools which have adopted the system, working with 770 school savings banks. From a register of 38,527 pupils in the 114 schools, of 31 cities, 18,101 are depositors of the sum of \$93,676.15, of which \$30,221.61 has been withdrawn, leaving a balance of \$63,454.54 due depositors.

THE PLAN PURSUED.

These schools pursue practically the same plan. The children bring their money every Monday morning; the teacher receives it, credits the amount on the child's card, which is about 6 by 4 inches, folded once. The teachers deliver the money received to the principal, who deposits it in the savings bank the same day. When a child has a deposit of 50 cents or more he gets a bank book, and when his deposits reach \$3 and over, he gets interest quarterly. The principal keeps the bank books, and surrenders them to the children only in the presence of one parent. During the summer vacation the cashier of the bank conducts the business for the teachers.

According to the report for 1887 of the Bureau of Education at Washington, there are in the States and Territories 12,000,000 of school children. Taking the amounts already deposited as a basis, if penny banks had been organized in all the schools the children would have saved \$25,250,000. Where has this large sum gone?

One benefit resulting from the school savings of the child is the sympathetic influence of juvenile thrift on parental recklessness. Many a father is shamed into saving by the enthusiasm of his little boy. It is asserted that the banks would not handle the school money alone, but they find that a large number of parents go to the banks where the children's money is and open accounts of their own. This induces the banks to supply cards and receive the school deposits.

POSTAL-STAMP SAVINGS.

A national system of postal-stamp savings, or the universal adoption of school savings, would obviate further effort. In lieu of this, and to meet an urgent necessity, private helpfulness has established expedients to entice the poor to save small sums.

Baltimore led the way by an adaptation of the British postal-stamp savings system, giving each depositor a bright-colored stamp as receipt. These are pasted on a pink card, where squares are marked cut for 36 stamps. None of the savings banks were

willing to coöperate efficiently, so the enterprising committee in charge established a savings bank under their own supervision.

Encouraged by the success in Baltimore, a penny provident fund was established in New York City by the Charity Organization Society. After having been in operation about a year, it was found, on November 1, 1889, that there was 8,846 depositors, aggregating \$3,600.38. Slowly gaining the confidence of the community, the fund had, July 1, 1890, the sum of \$7,014.77 remaining on deposit, and over 15,000 persons had availed themselves of the privilege in sums varying from 1 cent upward.

As was expected, the system is popular among the children. The different denominations of stamps bear different colors—1 cent, yellow; 3 cents, blue; 5 cents, green; 10 cents, brown; 25 cents, red; 50 cents, purple, and the young people seem to find the gay colors quite fascinating.

The business of this penny provident fund now includes over 75 branch stations in New York City. Besides the 10 district offices of the Charity Organization Society, stations are established at church missions, guilds, and Sunday schools, working girls' clubs, boys' industrial schools, and other places, gathering many earners of small wages. The United States Savings Bank on East Fifty-ninth street has also become a branch station, and in a short time numbered over 2,000 penny depositors.

The stability of this fund is assured by the high character of the society which established it, and the immediate supervision is conducted by a committee of gentlemen prominent in philanthropy and banking, and the treasurer gives a bond of \$10,000 for the faithful discharge of his duty.

PENNY ECONOMIES.

On June of this year Detroit, Mich., began the system of penny savings, in what seems to be the wisest and most suitable way. The savings banks are very slow to adopt the stamp system as part of their business. In many cities banks have been urged to make it supplementary, but almost uniformly they give the project a cold shoulder. It is worth noting, however, that an enterprising bank in Lynn is considering the matter favorably.

Detroit is the first city to have a stamp savings attachment to a corporate bank. This bank was established in 1840, and has grown with the city. The cards, supplied by the banks, free of charge, are folded twice and put into an envelope 5 by 3 inches. Cards for the reception of 5-cent tokens are printed in red ink to correspond with the color of tokens themselves, the 10-cent tokens in green, the 25-cent in blue, and the 50-cent in black. Only those of one denomination are allowed on the same card. Each card has spaces marked off for twenty stamps, and when filled, the color at once indicates its value—the red \$1; the green, \$2; the blue, \$5, and the black, \$10. By this method the depositor chooses one of the six amounts represented by the token, and deposits it each time.

When a card is full, even the one whose face value is a dollar, it is put in the bank to draw interest, and the depositor receives a regular bank book, but he is at liberty to go on filling cards. The system now numbers about twenty-five agencies, established at drug stores and other responsible places, in various sections of the city. Although it has been in operation only three months, the results have fully equaled the expectations.

Boston is on the eve of an experiment to encourage small savings. The preliminary steps were taken in June, and an organization formed, called the stamp-saving society. One of the main objects of the promoters is to educate small wage-earners to place their small savings in a reliable bank. The society intends to serve as the channel through which these savings may be conveyed to the corporate banks, and in its main features follows the New York system. The central station will be opened for business October 15, at 36 Bromfield street. This is the headquarters for supplies and information, and the cashier will be in attendance from 2 to 4 o'clock every week day afternoon, excepting Saturday. This central station supplies branch stations with cards, and sells the necessary stamps, but does not sell to individual depositors. This is done only at the branch stations.

BOSTON'S SYSTEM.

Suppose a child wants to begin saving with 5 cents. He goes to the nearest branch office and receives a card numbered, dated, and marked with the name of the station issuing it. He signs his name for purposes of identification. He is given a 5-cent stamp as receipt for his money, and he affixes it to the first square of his card. Whenever he can save a few cents he takes his card to the station and gets another stamp on it. When the card is full he goes to the station where he received it and gets the face value, signing the card, which is retained at the station as voucher that he has received the money. This he can deposit in a savings bank, or the central office will

supply him with a pass book. Minor changes may possibly be made before the society begins its business, but the depositor's card will bear substantially the following rules:

(1) Deposits are made only by attaching our stamps to this card. When one card is filled, ask for another. When a card is filled, or the sum of all the stamps attached amounts to \$3 or more, the amount may be transferred to a pass book on delivery of the stamp card at the central office.

(2) Money can be withdrawn only upon presentation and surrender of this card at the stamp station, where the deposits are made, and one week's notice of intention to withdraw money may be required. No sum can be withdrawn less than the amount represented by all stamps attached. Stamps will be redeemed only when attached to a stamp card.

(3) If this card is lost or destroyed no payment will be made thereon.

(4) The fund is not a savings bank, but only an agency for the deposit of small savings. It is only responsible for the deposits of all moneys received by it in some trust company, savings banks, or other institution duly authorized by law to receive trust funds; it is not responsible for any default of such depository.

(5) Every deposit is made and accepted subject to the above rules and conditions.

Readers will be glad to know that a sum as small as \$10 is sufficient to start a branch station. The bookkeeping is reduced to a minimum by means of the stamps. There is little chance for trickery, as a branch must always have the value of its purchase at the central station, either in stamps, canceled stamps on cards, or cash. All the money received at the central station will be placed in a trust company, subject to the treasurer's order. Depositors get no interest until their money reaches the savings banks—the goal of their efforts.

In many respects this is one of the most important steps ever taken in Boston for the benefit of the industrial classes. The poor, the children, have, close at hand, a new stimulus to save even the smallest sums, and thus lay the foundations of future prosperity.

[Newville (Pa.) Star and Enterprise, October 16, 1890.]

Postal savings banks are a means by which the Government offers through the post-office a depository for savings. To every citizen of the country, no matter where he may reside, provided he is within reach of some post-office which is a depository, the Government extends the opportunity to lay by his savings in small savings in small sums, allows interest thereon, and pledges its credit as security for the repayment on demand of the depositor or his representative.

They are not intended to interfere with or be a substitute for existing savings institutions, which for the most part deal with much larger sums and are found in the larger centers of population, and chiefly in the New England and Middle Atlantic States; but to extend a privilege similar to that which private institutions afford to the very large class of small wage-earners, many of whom live entirely out of reach of such institutions—on the principle that if saving and a place where what is saved can be kept in safety are good for some people they are good for all, and that the Government, being security, if anything in the country can be, and having already its "posts" established all over the land, should be the agent to furnish such facilities to its people.

[Portland (Me.) Express, November 25, 1890.]

It is announced that Postmaster-General Wanamaker, in his annual report, will outline a plan of postal savings banks in connection with the smaller post-offices of the country in places where these banks will not interfere with local savings institutions. Mr. Wanamaker expresses his belief, and certainly the success of a similar plan in England supports him, that such a plan would prove a great blessing to the poor and would teach them habits of saving which would not only benefit them, but benefit the country.

He does not believe that the Government will for several years make any reduction in the rate of postage on the ground that this important branch of the Government ought to be self-sustaining, while as a matter of fact, even with 2-cent postage, there is an annual deficit of about \$6,000,000. It is a mistaken policy to limit the facilities of extending and improving the mail facilities of this country solely to make the Post-Office Department self-sustaining.

If this principle was carried out in all branches of the National Government the United States would cut a pitiable figure among the nations of the world. Cheaper postage is a necessity for the expansion of business communications, and the revenues would be largely increased by the adoption of penny postage.

[Philadelphia Bulletin, November 25.]

Mr. Wanamaker is still a firm believer in postal savings banks, and will advocate them in his forthcoming report. It seems, however, that he would use them as an adjunct to and not a rival of the savings banks of the cities, and would, therefore, establish them principally at county post-offices where there are no other depositaries of small sums. No doubt they would be highly useful there.

[Philadelphia North American, November 26.]

Why Congress should need so much urging to establish the postal savings-bank system in the United States is not quite clear. Mr. Wanamaker discusses the subject in his current report and earnestly recommends the system, but other post-office officials have done that before him, and their recommendations have been calmly ignored. Yet the arguments are really all on one side. There are any number of good reasons why we should have postal savings banks in this country, and there is no reason at all to the contrary. In Great Britain, where the postal-saving system has been in operation for many years, its success has been unqualified. It has been of incalculable benefit to the community as an agency for the promotion of thrift, and has proved in every way a public convenience of extraordinary value. Its advantages are that it is absolutely safe, that it encourages the man who can only save a very little to put that little away, and that it enables him to deposit or withdraw his money at any post-office in the United Kingdom where he may happen to be. These are three important points in favor of the system, which could as well be carried on in the United States as it is in Great Britain. It is strange that Congress should be so slow to recognize its merits.

[Troy Standard, November 26.]

The Postmaster-General's suggestions to Congress are evidently worthy of consideration. It is to be hoped that, taking a lesson from the late election the Fifty-first Congress, in its closing session, will inaugurate a popular policy. This offers the only prospect of making any immediate impression upon the people that will be favorable to the Republican party. The Democrats are soon to have their opportunity, and well will it be for their party if they display not that capacity for blundering which has been for years past the curse of their party. The Republicans are no better in principle, so far as their Congressional Representatives are concerned. Their subserviency to great railroad and telegraph monopolies more than anything else has tended to reduce them to the pitiable plight in which they now find themselves. The marvel of it all is that as a rule the professional politician on neither side sees this. He goes muttering and grumbling of free trade or protection to his post as if either the one or the other must constitute the sole popular interest in politics, and in short determine the rise and fall of parties. Perhaps the Farmers' Alliance members of Congress can teach him something under this head. Let them show the professional politician that any programme that will satisfy the people must be a broad one.

It is to the credit of the administrative officers of the Government that they have shown more discernment than the Congressmen. While Postmaster-General Wanamaker is repeating for the hundredth time, more or less, his postal-telegraph and postal-savings bank recommendations, Secretary Windom is equally solicitous in behalf of measures that would contribute to swell the volume and stability of the currency. This project of the Secretary, who is in line with his previous record in regard to this policy, coincides with the views of the farmers. Some of the latter have spoken more or less of the tariff, but it is apparent that their views under this head are not unanimous, while the currency question finds them practically a unit in opinion.

Just at this juncture, too, the Postmaster-General's views of the savings project would suit them nicely. Private banks, especially with people of no extensive financial experience, are with reason distrusted. A Government bank could never fail in a Republic to the extent of being beyond power to pay its depositors. This is but one of the arguments that may be adduced in favor of such an institution, but it is all-sufficient, albeit the incidental benefits of post-office banking would be many and widespread.

[Philadelphia Call, November 26.]

A great many things can be said in favor of a postal-savings bank system and nothing can be said against it. Postmaster-General Wanamaker's recommendation ought to be adopted by Congress.

POSTAL SAVINGS BANKS

[Philadelphia (Pa.) Journal, November 26.]

The Postmaster-General has matured his report of the Post-Office Department, a portion of which being of the most vital interest to the wage-earning class of the community. He has already championed the postal telegraph question, and his views thereon are fairly well known.

Post-office savings banks has occupied a large share of attention, and his report thereon, which will shortly be given to the country, will be found of the utmost importance. This subject has found great favor with Postmaster-General Wanamaker, and undoubtedly he has made the working of this important institution in England, which has proven a great success, a matter of deep study and close investigation. The establishing of the post-office savings banks will enable the humblest citizen to have a safe place of deposit for small amounts, and especially will the advantage be found in scattered and small outlying communities where no banks are to be found within a radius of several miles. It will be found an encourager of thrift and economy, and millions of dollars now needlessly wasted for the want of proper protection will thus be saved. It is well known that vast sums of money are now lying idle in cupboards, in old stockings, and other hiding places, but with the establishment of the post-office savings banks, these amounts may be added to the circulating medium of the country.

In England there are over 250 millions of dollars in the post-office savings banks to the credit of the working class, who deposit from a quarter upwards. These depositors can make any post-office in the United Kingdom their bank, where they can both deposit their money and withdraw it; so that if away from home and desire to put any money into safe custody all the depositor has to do is to go into the nearest post-office, or branch bank, deposit the money and present the passbook that the amount might be entered therein. The official stamp with date is placed against the amount, as also the initials of the clerk or postmaster. By return of post a letter is received from London by the depositor informing him that the amount has been placed to his credit. Should the depositor desire to withdraw an amount he or she can go into any post-office, put the amount required on a slip of paper with his or her signature, and by return of post an order is received by the office from which it is desired to receive it to pay the amount asked for. Interest at the rate of $2\frac{1}{2}$ per cent. is given, and the passbooks are balanced half yearly.

Such a system in this country will be of incalculable value, and Postmaster-General Wanamaker will deserve the best thanks of the wage-earners especially for the great boon.

[Philadelphia Inquirer, November 26.]

There will be one advantage about Mr. Wanamaker's postal-savings banks, if established: They are not likely to be affected by financial panics.

[Shenandoah (Pa.) Herald, November 28.]

The Philadelphia North American can not understand why Congress should need so much urging to establish the postal-savings bank system in the United States is not quite clear. Mr. Wanamaker discusses the subject in his current report and earnestly recommends the system, but other post-office officials have done that before him, and their recommendations have been calmly ignored. Yet the arguments are really all on one side. There are any number of good reasons why we should have postal savings banks in this country, and there is no reason at all to the contrary. In Great Britain, where the postal savings system has been in operation for many years, its success has been unqualified. It has been of incalculable benefit to the community as an agency for the promotion of thrift, and has proved in every way a public convenience of extraordinary value. Its advantages are that it is absolutely safe, that it encourages the man who can only save a very little to put that little away, and that it enables him to deposit or withdraw his money at any post-office in the United Kingdom where he may happen to be. These are three important points in favor of the system, which could as well be carried on in the United States as it is in Great Britain. It is strange that Congress should be so slow to recognize its merits.

[Philipsburgh (Pa.) Journal, November 28, 1890.]

Such a system in this country will be of incalculable value, and Postmaster-General Wanamaker will deserve the best thanks of the wage-earners especially for the great boon.

[Omaha (Nebr.) Bee, November 29, 1890.]

POSTAL SAVINGS BANKS.

Postmaster-General Wanamaker appears to be sincerely ambitious to make his term in office memorable by giving the people new and permanent benefits. Among the various progressive reforms he has suggested perhaps none is more capable of doing great good than the establishment of postal savings banks.

Mr. Wanamaker's plan is to have savings banks instituted in connection with post-offices wherever they are called for by popular petitions. He states that he will take care not to bring them into competition with savings banks that already exist or with building loan associations. He believes a sum that would aggregate a vast total is secreted in all sorts of out-of-the-way places by a class of people who are afraid of banking institutions, and that his proposition would be the means of bringing it into circulation, with advantage to the business public.

The great benefit which may be expected from the successful establishment of postal-savings banks, however, will be its effects on the habits of the people. If these institutions can be made popular we shall see the beginning of a new era of thrift among the classes which stand most in need of it. When a savings bank can be found at every little post-office, people who have not formerly been in the habit of systematically accumulating money will begin to do so. There will be a revival of the good old-fashioned custom of saving instead of spending the surplus income, and the fact that the surplus is small will not deter people from laying it by where it will grow. It is the prevalence and popularity of savings banks which has made the wage-workers of New England the thriftiest class of working people in the world. It is the lack of such facilities, almost as much as the lack of proper teachings, which has led the people in other sections of the country away from habits of frugality and thrift. It is not necessary to enlarge on the inestimable advantage of general thrift among the people to demonstrate the great possibilities of good which may follow the establishment of postal-savings banks and the consequent revival of the soundest household maxims among the young men and women of the country.

If, in addition to the introduction of business methods in the service and the inauguration of a system of postal telegraphy, John Wanamaker gives the people popular savings banks, he will have done his part to make President Harrison's administration "great in the arduous greatness of things done."

[St. Louis Sayings, November 29.]

The necessity of postal-savings banks has long been recognized, and it will be in order for the Government to grant the boon in as simple and business-like a manner as possible. In other countries such banks have proved a great success, and they will certainly do as well, if not better, here.

[Port Huron (Mich.) Times, November 29, 1890.]

Postmaster-General Wanamaker, in his annual report, just published, recommends a new plan for postal-savings banks, the interest to be paid depositors to be filed by the Secretary of the Treasury at the beginning of each year, and to be one-half of 1 per cent. less than the average rate paid to depositors by private bankers, all postal savings to be deposited in the national banks on application. The Secretary also believes it will be for the interest of the postal service to have an ocean mail service.

[Leavenworth (Kans.) Times, November 24.]

POSTAL SAVINGS BANKS.

Postmaster-General Wanamaker has much faith in postal savings banks, and he will give evidence of it in his forthcoming annual report. He believes that one of the secrets of the causes of there not being money in circulation lies in the fact that in many sections of the country millions of dollars are secreted under carpets, in bed clothing, and elsewhere, or buried in the ground by persons afraid of the stability of the banking institutions, or who, having but a few dollars, are timid about opening accounts of deposit with banks.—*Atchison Globe*.

[St. Louis Democrat, November 30.]

There is force in the suggestion of Mr. Wanamaker that postal savings banks are particularly desirable in States that have no laws authorizing and regulating savings banks. Missouri is such a State, and her people would certainly be benefited by a system of banks adapted to the uses of the working classes.

[Toledo Blade, December 1, 1890.]

He also recommends postal savings banks, and outlines briefly his plan. A similar system has been in operation in Great Britain for a number of years, and has proved very successful. The only objection that is raised against it here is the general one that the Government should keep its hands off everything which is not purely governmental, and that paternalism is to be avoided in any and every guise.

[Tacoma Ledger, December 1, 1890.]

The suggestion of Postmaster-General Wanamaker, in his annual report, that the Post-Office Department go into a savings-bank business is worth considering. The suggestion is by no means new. It has its objections and they have been frequently quoted and fully discussed. There is this to be said in favor of the proposition, however, that if such a system of savings banks could be established, and so honestly and judiciously conducted as to both gain and retain the confidence of the people, they would do much to prevent the stringencies in the money market which so often and so seriously depress and disarrange business. They would keep in circulation and in use a large amount of money which now lies idle in small sums in the clocks and stockings of the poorer classes. These amounts, though small, are so numerous that they aggregate many millions of dollars. If this money could be kept in active use, as it would be if this postal savings bank system could be put into successful operation, it would greatly stimulate business and hasten development much more rapidly than it can otherwise be hastened by any Government arrangement of the circulating medium.

[Winchester (Pa.) Republican, December 3, 1890.]

Postmaster-General Wanamaker shows by his annual report of this year that his earnest desire for the establishment of postal savings banks is in no degree abated. In fact the head of the Postal Department is an enthusiast on this point, and as he is a man of large experience in business affairs, and seems to have given the matter a great deal of time and thought, his views deserve to be carefully studied. We quote his general plan, which is based upon the system as adopted in Canada and England.

Whenever postal savings banks have been introduced they have produced most excellent effect. They have been the means of inducing thousands of persons in the humbler ranks of life to save their earnings. So long as there was no opportunity to put their moderate savings where they would be safe, and at the same time earn something in the way of interest, they were squandered as rapidly as they were received. But no sooner were these postal banks established than thousands hurried to them with their small sums, ranging from a few cents to sums of five dollars or more. They have also shown that once this habit of saving has been introduced it grows rapidly. There has been a large, steady increase throughout Great Britain ever since the experiment was introduced. The sums at present in these depositories amount to many millions of dollars, and it is safe to say that but for this opportunity offered to these people the greater part of this money would have been spent in ways that would have done more harm than good.

[Grand Forks (Dak.) Plaindealer, December 3, 1890.]

As the Plaindealer has been advocating the establishment of postal savings banks we give what the Postmaster-General has to say on the subject:

"I recommend that the Post-Office Department be authorized to establish postal savings banks under regulations formulated by the Postmaster-General; that the said banks be located as follows:

"(1) In States having no laws regulating savings banks.

"(2) In any other upon petition of a considerable number of residents of any one locality; and

"(3) Not more numerously than one post-office for every 10 miles of area; that the interest to be paid depositors shall be fixed by the Secretary of the Treasury at the beginning of the year, and that one-half of 1 per cent. less than the average rate paid to depositors by private bankers; that all postal savings received within a State shall be placed on deposit with the national banks of that State, on application, in such amounts and at such interest as the Secretary of the Treasury shall prescribe, and that all such deposits be declared by special enactment preferred claims against the banks holding them."

[Bethlehem (Pa.) Times, December 3, 1890.]

The proposed plan of Postmaster-General Wanamaker for the establishment of postal savings banks is sure to call forth a variety of comment. It is very reasonably argued by its critics that the post-office has no right to go into the banking business, and that the scheme is constitutionally unwarranted. This objection may or may not hold good in the day when the plan is put to the test; but it is the cause and not the method of Mr. Wanamaker's suggestion that is of most importance. His argument that much of the present financial stringency is due to the practice that obtains among ignorant people of hoarding their earnings instead of trusting them to the banks is a very sound one. The only way to alter this condition is to educate it out of existence, and there is no better source of education than in the multiplication of small savings stations in all parts of the country.

Whether the postal savings bank is the most practical means is at least questionable. The school bank certainly hits wide of the desired mark. But some means or other should be introduced in every community to induce the working people and those of small means to lay by wealth by dribblets, a nickel here and a dime there and once in a while a quarter dollar. The rapidly-increased building associations have accomplished an excellent work in late years in encouraging men and women to "save the pieces" instead of wasting them frivolously. The dime savings banks of various natures have also done much. But the chief difficulty that hampers these and the real reason that so much hard-earned money is treasured up by untaught people is their lack of faith in every person and everything save themselves and their own strong box.

It has been argued that postal savings banks would obviate the trouble, since everybody trusts the Government. But we know many persons who don't. To those who have not been properly taught every agency that reaches out after their money is an artful schemer. It will require much teaching to bring them to another belief, but the establishment of many means for saving and the proof of their soundness will in due course dispel this unfortunate mistrust in banks. Until, however, there shall be, in city and country, accessible to all, some such inducement to economy as those here mentioned the present stringency may be at any time liable to recur.

[Indianapolis Journal, December 4, 1890.]

The New York Sun copies Postmaster-General Wanamaker's suggestion for postal savings banks, and says:

"This is a very pretty scheme, but will the Postmaster-General be kind enough to point out any provision in the Constitution which permits his Department or any other department of the Federal Government to go into the savings-bank business?"

Will the Sun be kind enough to point out any special provision in the Constitution which authorizes the Government to go into the money-order business, the postal-note business, the postage-stamp or the stamped-envelope business? Without reference to the merits of the suggestion for post-office savings banks, there is as much authority in the Constitution for that as there is for any of the other things named. The Constitution was not intended to prevent progress, though that is about the only use the Democratic party makes of it.

[St. Paul Globe, December 4.]

The Postmaster-General, in his annual report, gives considerable attention to the scheme of postal-savings banks. It has more to commend it than the postal telegraph, and as the official mind discerns the error of his party platform in favoring one-cent letter postage for any early period, this postal-savings-banks scheme is, perhaps, the most hopeful of the several new methods he would attach to the service. Jay Gould speaks of the many millions of dollars that came to light in a recent financial crisis as coming from stockings and household seclusions. Wanamaker believes that there are vast amounts tucked about domestic depositories all over the country, lacking the conveniences of banks or having insufficient faith in their security. These very largely, he supposes, would seek the opportunities afforded by the Government in the postal department. The operation of this system in England has had a salutary influence in promoting economy and prudence among the working classes and people of small earnings. The statement is made that no class of wage-earners in the world are as thrifty as those in New England, and much of the credit is attributed to the savings-bank system. It is not claimed that their earnings average higher than elsewhere, but that the constant invitation to frugality and safe investment is a persuasion that leads to such substantial results. The frequency of towns and villages and the density of population probably enable the private savings banks

to meet most of the needs. This is, or may be, the case generally in the larger towns of the country, but a great majority of the population is not convenient to these. The proposition is to establish this department at every post-office where the people petition for it. The Government takes the little sums as they are gathered and pays a small interest. This would evidently be a very valuable economic educational process. The young people would be ambitious to be among the creditors of the Government and acquire habits that will be very useful to them in life.

[Duluth (Minn.) Times, December 4.]

Postmaster-General Wanamaker advises the establishment of the postal savings bank system in this country. It is something of a surprise that the Government had not provided for such banks several years ago. They would be of inestimable benefit and convenience to the people, in all smaller towns especially. The United States and Germany are the only two great powers which have not in existence this system which has been so successful in England and other countries. There is little good reason why Congress should not pass an act providing for the addition of this system to our Postal Department.

[Erie (Pa.) Times, December 5, 1890.]

Postmaster-General Wanamaker, in his late confessedly excellent annual report recommends the establishment of postal savings banks. He had abundant warrant for this recommendation. Such banks have been introduced in England and Canada with beneficial effects. They have been the means of inducing thousands in the humbler ranks of life to accumulate small earnings. So long as there was no opportunity to put their moderate savings where they would be secure and at the same time earn something in the way of interest, they were squandered as rapidly as they were received. But since the establishment of postal banks, thousands have deposited in them in sums ranging from a few cents to \$5 or more. The amount at present in the banks reaches many millions, and it can truly be said that but for the chance thus afforded the largest portion would have been expended in ways that would have done more harm than good.

Many persons are disinclined to place their money in the ordinary banks, sound and reliable as those now doing business in Erie have proved. Moreover, the latter do not care to receive very small amounts. It is, it seems to us, greatly to be desired that Congress make the necessary provision for putting the project into operation on at least a small scale.

[Halifax (Pa.) Gazette, December 5.]

The plea which the Postmaster-General makes in his annual report in behalf of post-office savings banks ought to receive attention from Congress. In Great Britain postal-savings banks have been in operation with most satisfactory results for many years. In this country the subject has been frequently brought to the notice of Congress in reports from the Post-Office Department, but up to this time nothing further has been accomplished. It is time something was done. In the light in which the Postmaster-General puts the subject there is no doubt that the system as he proposes it would be a great promoter of thrift among the people. Let Congress do something with this question and not continue to ignore it as has been done in the past.

[Peabody (Mass.) Press, December 6.]

Postmaster-General Wanamaker seems to be an enthusiast on the subject of postal-savings banks and is doubtless in a position to put his theory into experimental practice. He does not favor a system that will encroach upon the field already held by the bankers and consequently will not antagonize the private banking institutions in the country. Neither would he have them infringe upon the established rights of savings institutions and building loan associations.

He believes that postal-savings banks would be a blessing to the common people whose earnings are easily dissipated in the unnecessary as well as the necessary things of life, and that their existence would incite them to the habit of saving by the convenience with which it can be done. Then he believes that there is a class of people who do save but who hoard their savings in all kinds of strange and out of the way places and that the business world suffers because these hoards of money, which he believes aggregate millions, are out of circulation and dead to their intended purpose and general usefulness. Thus he sees in his plan a means to encourage people to thrifty and forehanded habits, and to help the world by the legiti-

mate use of the circulating medium provided by Government for the benefit of the whole people.

He would have the people petition the Post-Office Department for deposit facilities in connection with the local office, and thus the requirement and needs of the community would bring about the post-office savings institutions and it would be literally a peoples' bank, with "Uncle Sam," with all his vast and wonderful resources, as the custodian, investor, and responsible treasurer of the money.

This scheme of Postmaster Wanamaker is most certainly feasible. It is not original with him. The idea has often been presented and many men have made it a pet theory in the years gone by. To put it into successful operation will make some man's name an honorable one. It may as well be Postmaster Wanamaker as another to win this distinction. Something of the kind is to be evolved in this nation without a doubt.

[Mount Joy (Pa.) Herald, December 6.]

Postmaster Wanamaker, in his last report, recommends postal savings banks, as well as postal telegraphs, for our country. Postal-savings banks are especially beneficial to the working classes, and the wonder is that America did not take the lead in establishing them. Even Japan has them since 1875, and her working people deposit over \$20,000,000 a year into them for interest and safe keeping. By all means let us have postal-savings banks.

[Lansingburgh (N. Y.) Times, December 6, 1890.]

Penny savings institutions are to be established in Boston on a plan essentially the same as the British postal savings bank. The purpose is to afford the poor a convenient means of saving small sums. No interest will be paid, as the income from such investments as can be made will not be larger than the expense of handling the funds. The benefits to be derived from the system are largely more than the money that can be saved. That is not likely in any case to grow into a sum sufficient to more than tide the depositor over some short period of misfortune. The inculcation of the habit of saving is the important thing. It develops thrift and is the surest way of checking pauperism. The person who learns to save has learned the first lesson of success. All the knowledge that can be gained from schools and colleges is not, to the person who must be self-dependent, worth as much as knowledge of how to save and the habit of doing it. It is the foundation of all fortunes. It is the best safeguard against intemperance and immorality. Throughout the world it will be found that, in those countries where there is frugality, there is also the highest average of morality.

[Peabody (Mass.) Reporter, December 6.]

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[Pottsville (Pa.) Journal.]

Postmaster-General Wanamaker in his annual report again calls attention to his favorite scheme of postal savings banks. Mr. Wanamaker's general plan is based upon the system adopted in Canada and England. He proposes that the Post-Office Department be authorized to establish savings banks, under regulations to be formulated by the Postmaster-General, and that they be located first, in States having no laws regulating savings banks; and second, in any other State upon petition of a considerable number of residents of any one locality.

Mr. Wanamaker further suggests that they be not more numerous than one for every 10 miles of area; that the interest to be paid depositors shall be fixed by the Secretary of the Treasury at the beginning of the year, and that it be one-half of 1 per cent. less than the average paid to depositors by private bankers. He also recommends that all postal savings received within a State shall be placed on deposit with the national banks of that State on application, in such amounts and at such interest as the Secretary of the Treasury shall prescribe. All such deposits are to be delared by special enactment preferred claims against the banks holding them.

There is no doubt that a system of banking which invites small payments would be of incalculable benefit to thousands of persons in the humbler walks of life. The tendency with the poorer classes of people is to spend everything because their monthly savings are at the most so meager that they appear hardly worth putting aside. Experience has shown that these same people will deposit in a postal savings bank sums so small that they would never think of carrying to an ordinary bank. In Great Britain, where postal savings banks have been in existence for some years, the deposits amount to many millions and range from a few cents up to hundreds of dollars. The existence of the banks has taught the people the value of caring for the pennies and having the pounds care for themselves.

The general notion that these banks can flourish only at the cost of the banks now in existence is disapproved by the experience in the countries already named. It has there been found not only that the most of the patrons of the penny banks were not patrons of the other banking houses, but that when once they have learned the art of saving, they speedily transfer their accounts to the other banks. Their reasons for this are twofold, the larger banks pay a higher rate of interest, and the depositors naturally desire to become identified with the bigger concerns for very obvious reasons. With this usual foresight, Mr. Wanamaker has taken care that his plan shall endeavor to stimulate this thrift, and at the same time point the people to the larger banks as those which still pay the higher rates of interest.

[Keyser (W. Va.) Echo, December 12.]

Several countries have adopted the postal-savings-bank system, and the success has been such as warrants imitation. Postmaster-General Wanamaker recommends the introduction of postal-savings banks, with such conditions that they ought to prove helpful to the people and also to other savings banks. Let us have the postal-savings bank.

[Newport (R. I.) News, December 12.]

Postmaster-General Wanamaker not only advises penny postage, but recommends the establishment of postal-savings banks throughout the country. * * *

That there are numerous difficulties in engrafting the savings-bank system on the Post-Office Department is evident, but they are not too great to be overcome, providing an improved civil service is adopted in the matter of appointments to office. It may be urged with a show of truth that if such a system of savings banks could be established, and so honestly and judiciously conducted as to both gain and retain the confidence of the people, they would do much to prevent the stringencies in the money market which so often and so seriously depress and disarrange business. They would keep in circulation and in use a large amount of money which now lies idle in small sums in the clocks and stockings of the poorer classes. These amounts, though small, are so numerous that they aggregate many millions of dollars. If this money could be kept in active use, as it would be if this postal-savings-bank system could be put into successful operation, it would greatly stimulate business and hasten development much more rapidly than it can otherwise be hastened by any Government arrangement of the circulating medium. Nevertheless, it is a subject not to be readily disposed of, and the objections that may be urged are of the most weighty character.

[Philadelphia Bulletin, December 12.]

Mr. Wanamaker's postal savings banks scheme is progressing in the Senate, which has instructed the Post-Office Committee to inquire into its advisability. There has been some opposition to it manifested in popular discussion, but it has been mostly in Democratic papers, and the general tone of public opinion seems to favor it. A great deal will depend, however, on the details of its disposition and management.

[Milford (Mass.) Gazette.]

The advocates of a postal savings bank system find a strong argument in the experience of Japan, where such a system has been in existence for the past 15 years. The object is to encourage thrift among people of moderate means, and the accomplishment of that object is seen in the fact that in the first year there were 2,000 depositors with over \$15,000 to their credit, while last year's report shows that in Tokio alone, \$10,400,000 had been deposited by 356,000 persons, while the total amount of deposits throughout Japan exceeded \$20,000,000.

[Parker (Pa.) Phoenix, December 26.]

The postal savings banks are being introduced into several countries, they have proven extremely successful in England and now benighted Japan has taken a step ahead of this highly civilized and progressive country and adopted the postal savings bank feature. It is the poor man's depository, for it is controlled by the Government, consequently safe. The difference of 1 or 2 per cent. to the laboring man is nothing in comparison to the knowledge that his savings are perfectly secure. The want of a savings institution is mostly felt in small manufacturing towns.

[Bloomington (Ill.) Leader, December 29.]

The Postmaster-General, in view of the increasing demand for savings opportunities, is urging upon Congress the enactment of a law establishing a postal savings system. He recommends the establishment of postal savings banks in States having no laws regulating savings banks or in other States upon petition of a certain number of residents of any one locality.

These banks are to be located at the post-offices and be placed in charge of the postmaster, and shall not be nearer to each other than one for every 10 miles of area. He proposes that interest be paid to depositors at one-half of 1 per cent. less than the average rate paid to depositors by private bankers, and that the money deposited in these postal banks shall be placed on deposit with the national banks of the State in which the deposit is made at such interest as the Secretary of the Treasury shall prescribe, making all such deposits preferred claims against the banks holding them. This proposition meets generally the approval of those who have made a study of the savings-banks system. The chief objection to postal savings banks in the past has been that they would take the money out of circulation, as no plan heretofore presented had provided for the loaning or handling of the funds so deposited. Of course the secret of success of any bank is in the fact that it handles over and over again the money deposited with it by its customers, making itself responsible for the money so that it can be paid at any time even although loaned out to somebody else. The objection to the postal banks saving system heretofore has been that no provision was made for keeping this money so deposited in circulation.

The plan proposed, however, by the Postmaster-General, it is believed, obviates this, and will have the double value of supplying a low rate of interest to depositors and at the same time keeping the money in circulation. The objection has also been urged that the Government could not afford to pay interest to depositors, but this plan, which proposes the reloaning of funds to national banks, will of course require those banks to pay as high a rate of interest at least as the Government pays to depositors, and will at the same time continue the money in circulation. Mr. Wanamaker's plan is commented upon by those who have made a study of the financial question as a very ingenious and practicable one, which, combined with the systems in use in other countries, would be extremely valuable in the United States. The postal savings-bank system of Great Britain continues to give great satisfaction there. Over 8,000,000 people made deposits last year with the postal savings banks of that country, their total deposits for the year being in rounds numbers \$100,000,000. In France the postal savings deposits amount to over \$53,000 and in Belgium over \$50,000.

[Salem (Mass.) Register, January 1, 1891.]

All the post-offices in Italy receive money on deposit, at the rate of 3½ per cent. And why shouldn't the post-offices in the United States do the same thing? In localities in which savings banks abound there is no necessity for the Government to receive deposits; but the post-offices abound all over the country, and in every section there are people who would gladly avail themselves of the privilege of saving their money through the postal banks.

[Chicago News, January 3.]

Recent failures of private banking institutions in Chicago serve to emphasize, by their revelations of irresponsible banking methods, the need of greater security for small depositors.

Postal savings banks are wanted. This nation is the only one of importance, except Germany, that has not encouraged the thrift of its citizens by taking care of their small savings. In Great Britain and her colonies, France, Belgium, the Netherlands, Sweden, and even the Hawaiian Kingdom, the postal savings bank is an institution of incalculable benefit to persons of small means but thrifty habits. The accumulation of small savings in most of these countries has increased at such a rate since the establishment of postal savings banks as to form a total of enormous magnitude. The beneficence of the system is unquestioned; it enables the savings of small depositors to be taken care of at a minimum cost. The postal savings banks are not money-making institutions. Like the postal service, the Government endeavors to serve the people at actual cost. There is greater security than can be possible in the best of private banks, as the national credit is pledged to every depositor. This absolute security undoubtedly accounts for the success of the system wherever tried, even in spite of the fact that the Government always offers a lower rate of interest than banks under private control.

But perhaps the greatest argument in favor of postal savings banks is the fact that they bring banking facilities within easy reach of all classes of the people and in every section of the nation. This argument is skillfully employed by Postmaster-General Wanamaker, who is an enthusiastic advocate of these banks. In his last annual report Mr. Wanamaker says:

"It is not the large cities that feel this need, though even at the populous centers banking institutions generally do not offer convenient hours for working people and do not care to deal with small sums. It is the large mass of wage-earners outside of large cities that clamor for help to keep hard-earned gains. In some of the States no laws exist to give State protection to savings deposited with private capitalists. It is stated on reputable authority that in one portion of the country containing 12,000,000 of population there are not as many places of deposit for the savings of small sums as exist in a single city of 80,000 people in a New England State."

Mr. Wanamaker's recommendation is that postal savings banks should be located "(1) in States having no laws regulating savings banks; (2) in any other State upon petition of a considerable number of residents of any one locality, and (3) not more numerous than one post-office for every 10 miles of area." The Postmaster-General has also outlined in his report the working details of such a system. The obvious advantage to be gained in the initial establishment of such banks is that the working machinery is ready at hand. United States post-offices would simply have a savings-bank annex. The immense advantage to depositors of having their savings where panics would not affect them nor the danger of ordinary banking discourage increased thrift is so obvious that the people should unite in a demand for postal savings banks.

[Troy (Pa.) Register, January 3, 1891.]

Penny savings institutions are to be established in Boston on a plan essentially the same as the British postal-savings bank. The purpose is to afford the poor a convenient means of saving small sums. No interest will be paid, as the income from such investments as can be made will not be larger than the expense of handling the funds. The benefits to be derived from the system are largely more than the money that can be saved. That is not likely in any case to grow into a sum sufficient to more than tide the depositor over some short period of misfortune. The inculcation of the habit of saving is the important thing. It develops thrift and is the surest way of checking pauperism. The person who learns to save has learned the first lesson of success. All the knowledge that can be gained from schools and colleges is not, to the person who must be self-dependent, worth as much as knowledge of how to save and the habit of doing it. It is the foundation of all fortunes. It is

the best safeguard against intemperance and immorality. Throughout the world it will be found that, in those countries where there is frugality, there is also the highest average of morality.

[Keokuk (Iowa) Gate City, January 10, 1891.]

Postmaster-General Wanamaker is an enthusiastic advocate of postal-savings banks, a public system of saving that has been encouraged in many European countries with marked success. He says:

"It is not the large cities that feel this need, though even at the populous centers banking institutions generally do not offer convenient hours for working people and do not care to deal with small sums. It is the large mass of wage-earners outside of large cities that clamor for help to keep hard-earned gains. In some of the States no laws exist to give State protection to savings deposited with private capitalists. It is stated on reputable authority that in one portion of the country containing 12,000,000 of population there are not as many places of deposit for the savings of small sums as exist in a single city of 80,000 people in a New England State."

These banks could be established in the post-offices as an annex and conducted at an additional expense that would be comparatively small. Depositors would be assured of the safety of their deposits. Monetary panic, financial crises, and mercantile convulsions would not affect their absolute security.

[Aurora (Ill.) Democrat, January 16.]

The recent failure of several private banking institutions, as that of Kean & Co., at Chicago, calls attention to the need of greater security for small depositors, and in considering this question what is more practical than the postal-savings bank system, the establishment of which was so earnestly urged on Congress by the Postmaster-General in his recent report? Among the strongest arguments in favor of this system is the fact that it will bring banking facilities within easy reach of all classes of the people and in every section of the nation. Postal-savings banks are not money-making institutions. Like the postal service, the Government endeavors to serve the people at actual cost. There is greater security than can be possible in the best of private banks, as the national credit is pledged to every depositor. No doubt this absolute security accounts for the success of the system wherever tried, although the Government pays a lower rate of interest than banks under private control. In his report Postmaster-General Wanamaker says on this subject:

It is not the large cities that feel this need, though even at the populous centers banking institutions generally do not offer convenient hours for working people and do not care to deal with small sums. It is the large mass of wage-earners outside of large cities that clamor for help to keep hard-earned gains. In some of the States no laws exist to give State protection to savings deposited with private capitalists. It is stated on reputable authority that in one portion of the country containing 12,000,000 of population there are not as many places of deposit for the savings of small sums as exist in a single city of 80,000 people in a New England State.

The Postmaster-General's recommendation is that postal-savings banks should be located "in States having no laws regulating savings banks, in any other State upon petition of a considerable number of residents of any one locality, and not more numerous than one post-office for every 10 miles of area." The advantage to be gained in the initial establishment of such banks is that the working machinery is ready at hand. United States post-offices would simply have a savings-bank annex. The immense advantage to depositors of having their savings where panics would not affect them nor the danger of ordinary banking discourage increased thrift must be obvious to every thinking person. The subject is one which certainly demands the most earnest consideration of Congress.

[Wilkes Barre (Pa.) Record, January 19, 1891.]

One of the most unfortunate results of the consolidation of our city schools is the breaking up of the school-savings system introduced by Superintendent Potter, by permission of the directors of the third district school board. Mr. Potter had spent much time in studying the merits of the school-savings system as in practice in other wideawake cities, had convinced the directors of the third district that the schools here presented a fine field for its introduction, and by their permission he had set the system in operation here, so modified as to excellently meet the requirements of our people. Though in operation for but a few months, the usefulness and complete success of the idea were fully demonstrated. Pupils quickly took up with the idea, and hundreds who had never thought of saving at once took in the lesson in thrift and had the pleasure of seeing their pennies accumulate and form dollars. The par-

ents who at first, perhaps, distrusted the innovation soon viewed it with great favor and the teachings of the schoolroom extended to the wider sphere of the home. Older persons than pupils received their first ideas of economy and saving, and the result was highly beneficial to a considerable number.

Unfortunately, with the consolidation of the schools under one management, Mr. Potter's system, planned for one district, was found impracticable in its application to the schools of the entire city under existing conditions, and its operations ceased at the close of the last school year. During the current year no deposits have been received and the books have been returned to the children, who have in many instances drawn out their little accounts and spent the money accumulated. In a number of instances, however, the children have continued to make deposits with the bank, hoarding their pennies and nickels at home until they made up the dollar, the smallest sum the banks receive. In nearly every instance where the books have been returned to the parents regret has been freely expressed that the system should have been abandoned, and there is every evidence that it was popular with the patrons of the schools to a degree that strongly urges its restoration in some form.

The system introduced was discarded because it required the service of some one official in gathering the weekly deposits and having them properly accredited, and no such official, with the time at his disposal, can be found in our school department. The entering of weekly deposits of a few cents each on the accounts of so many as are included in our entire school system seemed also too great an undertaking for the banks, especially as the deposits would be made by the teachers. No modification of the system has yet been suggested that seemed practical. In this emergency we would call attention to what is called the "stamp system," put into operation in Baltimore by the Provident Savings Bank, not for school children, but for the general public. The system has proved so eminently successful that it is being introduced in New York, Boston, Detroit, St. Paul, Denver, San Francisco, and other cities. Indeed, so widely are its merits recognized that a large bank supply house in New York is prepared to furnish all the books, blanks, stamps, etc. The Provident Savings Bank began to offer facilities for small depositors, first by establishing branch offices in twenty or thirty places in the city where deposits could be made on Saturday nights. The business grew rapidly and the rush became so great that the work of entering in bank books and ledgers the many small sums became too great. The bank then began searching for some simpler and more expeditious system, and on the suggestion of Dr. Remsen, of Johns Hopkins University, adopted the stamp-system.

The plan, briefly outlined, is this: Supplies of stamps, signature cards and depositors' cards are left with the agencies each week. Any person wishing to become a depositor signs a signature card for identification, and receives for his deposit, if it be less than \$5, stamps to the value of his money. These he affixes to the stamp card which also bears his signature. In making further deposits he has but to buy at the agencies more stamps which are also pasted upon the stamp card. When the stamp card contains stamps amounting to \$5 it is deposited at the bank, the amount credited to the depositor in the usual bank book, and the stamps are canceled. To make further deposits he gets another card and buys stamps as before. The stamps are somewhat like postage stamps and of three denominations, 5, 10, and 25 cents. It is plain that this system, if introduced here, would find eager patrons. To introduce it into our schools the amount of stamps required on each card might be reduced to \$1. A given amount in stamps would be left with each teacher on the first of the week or monthly, the collector on his next trip collecting the money and the unsold stamps and leaving again the usual supply of stamps. This would remove all necessity for the keeping of accounts except with depositors of \$1, which could readily be entered by the collector in his rounds. Thus simplified the system could be readily introduced to the great advantage of the community and to the profit of the bank undertaking it.

[St. Joseph (Mo.) Herald, January 21.]

Postmaster-General Wanamaker in his annual report advocates the establishment of postal savings banks wherever there are not sufficient State savings banks and where there are savings banks, if a reasonable number of persons petition therefor. He reasons at considerable length, and the following argument contains some of his best arguments:

To teach economy and thrift as leading up to better citizenship falls short if there is no adequate provision for the safe-keeping of savings. Such places ought to be within an hour's walk of the home of every workingman. They can not be left to private capitalists to provide, because it would not pay them to deal in small sums or perform the necessary labor. The post-offices and the postmasters are in every respect rightly situated to do this work. It would be a great comfort to the people to have these banks that could not be affected in times of financial panic.

The most prolific source of bank failures and the consequent great loss to depositors is the system of deposits as now conducted. A very large portion of the loans made by banks is of money deposited by their customers, and a financial crisis causes a run on the banks that embarrasses them. The strong argument of Mr. Wanamaker is on this point, for confidence in the postal savings banks would never fail and panics from that cause would cease.

These postal savings banks are not intended to take deposits on running accounts against which checks may be promiscuously drawn, but only time deposits are taken and are not suited for the everyday deposits of business men, and on these time deposits interest is paid.

Of all the great powers only Germany and the United States are without postal savings banks, and in all the countries where they are in use they have proven entirely safe and very popular. Great Britain's postal banks had last year 8,101,120 depositors, an increase of more than half a million, with deposits amounting to \$100,000,000. Even in Ireland the increase of deposits was \$457,915.

The postal banks do not take the money out of circulation as it is deposited in banks. Mr. Wanamaker recommends that the deposits be made in national banks, and by special enactment be made preferred claims. This would make the deposits safe and would prevent embarrassments to banks by runs brought on by financial scares.

General Wanamaker is a reformer, one among ten thousand, who is able and willing to stand firm against the interests that always block the ways to reforms. Such men as he and Secretary Rusk are in demand, and none other can save us from the fate of the Roman republic. Our Government has become a machine of oppression by which the masses are robbed and the classes enriched, and if we have any desire to transmit to posterity a Government worth preserving, it is full time for an awakening to the perils that surround us. The most effective means we can employ is to support such men as Rusk and Wanamaker.

[Kansas City Journal, January 23, 1891.]

The Postmaster-General's report recently published contains probably the strongest showing that can be made in favor of a postal savings system. Mr. Wanamaker's statements of fact may be relied upon, though the public will of course draw their own conclusions as to whether, upon the showing made, postal savings banks ought to be established in this country.

The system has been adopted, according to Mr. Wanamaker, by all the great powers of the world, except Germany and the United States. It might be well to ascertain why Germany has not adopted it. According to the last report of the postal authorities of Great Britain an average of one person in every eight of the population is a depositor. In England and Wales the average deposit is \$70, and in Ireland \$94. A recent French report shows the total amount of deposits in postal savings banks to be about \$60,000,000, and in 1888 the Belgium depositors had \$50,000,000 to their credit. Even in India there were two years ago 5,966 post-office banks with 261,157 depositors. The Hawaiian Islands have a postal savings system, and the deposits last year amounted to nearly \$1,000,000.

Mr. Wanamaker believes that postal-savings banks encourage thrift on the part of people who never think of starting bank accounts now. He does not believe that they would interfere with the present banking system, but would rather be the depositories for the money of people who either do not at present save anything or else hide their savings in cracked tea cups. He would particularly guard against interference with other banks by locating the postal banks as follows: First, in States having no laws regulating savings banks; second, in any other States upon petition of a considerable number of residents of any one locality; and third, not more numerous than one post-office for every 10 miles of area. He would have the interest rate fixed by the Secretary of the Treasury at the beginning of every year, and would make it one-half of 1 per cent. lower than the average rate paid by private bankers. And finally he recommends that all postal savings received within a State should be placed on deposit with the national banks of the State at such rates of interest as the Secretary of the Treasury should prescribe, and should be preferred claims against the banks holding them.

That in brief is Postmaster-General Wanamaker's postal-savings bank scheme which is submitted for the approval or rejection of the people.

[Salt Lake City Herald, January 24, 1891.]

In his last annual report Mr. Wanamaker urges the adoption of another scheme which will meet with a more friendly reception, provided the details shall be satisfactory. He advocates the establishment of a system of postal-savings banks, es-

pecially at places where there are not sufficient State savings institutions. One of the arguments he employs is contained in the following extract from his report:

"To teach economy and thrift as leading up to better citizenship falls short if there is no adequate provision for the safe-keeping of savings. Such places ought to be within an hour's walk of the home of every workingman. They can not be left to private capitalists to provide, because it would not pay them to deal in small sums or perform the necessary labor. The post-offices and the postmasters are in every respect rightly situated to do this work. It would be a great comfort to the people to have these banks that could not be affected in times of financial panic."

Many of the leading nations of the world have postal-savings banks, and we believe that they everywhere work admirably. This is certainly true of Great Britain, where there are more than 8,000,000 depositors, and the deposits aggregate a hundred million dollars. The laboring people want a place where they can invest their small savings and know that the money is safe; that they can get their money when they want it, regardless of panics or runs on the banks.

But we can not believe that the plan will be a success in this country, at least for many years to come, and for this reason: The Government can borrow all the money it requires at 2 per cent. interest per annum. Two per cent. Government bonds would to-day fetch a premium, especially if they were long-time bonds. Then, to pay more than that would be bad financiering, and subject the Congress which authorized it to some criticism. On the other hand, savings banks pay from 3 to 6 per cent. interest, according to location and the demand for money. In this city the rate is 5 per cent.; in New York it is from 3 to 4; in San Francisco it is 4; in Washington State it is 6. And so it goes; everywhere the rate being higher than the Government, which has no real use for the money, the income being greater than the expenditures, could pay. How much money would the working people of Salt Lake, or any city or town in Utah, deposit in a postal savings bank which paid 2 or 3 per cent. interest per annum when they could get double the interest in a private savings bank or three or four times the interest by loaning to individuals? The absolute safety which the Government bank would afford might induce the individual to deposit there at a lower rate of interest, but not at a rate less than half of what could be obtained elsewhere.

The postal savings bank will yet, we believe, become popular in this country, as elsewhere, and will prove a great benefit to the laboring classes, but it will not be until the nation is older and the use of money is worth less than at present.

[Indianapolis Journal, January 24, 1891.]

The deposits of the savings banks in New England, New York, Pennsylvania, and New Jersey amounted to \$1,279,000,000, according to the reports made for the year 1890—an increase of \$65,000,000 over the preceding year. The number of depositors was 3,520,000, an increase of 140,000 during the past year. As the population of those States was 17,300,000, it appears that 1 person in 5 is a depositor. The increase of deposits the past year was over \$17 to each depositor, and nearly \$4 to each inhabitant. There is no reason why the 45,000,000 inhabitants of the rest of the country should not have saved as much as those of the Eastern States. If the valuation was made in property instead of money the savings in the rest of the country would show a larger aggregate. If they saved three-fourths as much, the annual savings of the wage-earners of the country would be \$200,000,000.

The New York Bulletin estimates that the total savings of all those who work for wages and salaries is over \$200,000,000 a year. The Western wage-earners do not deposit their savings in savings banks, for the reason that there are few such banks, and more profitable investments are found in hundreds of local loan and building associations. It is very probable that wage-earners in cities like Indianapolis are saving as much money *per capita* as those in the East, for the reason that living is cheaper in the older States of the West than in the East, and the rivalry of the managers of loan associations is greater than that of savings banks. Furthermore, many wage-earners in the smaller towns of the West, when there are no other places of deposit or investment, put their savings in the ordinary business banks. Supposing that the accumulations of the 45,000,000 people in the rest of the country are as large as those of the 17,300,000 in the East, the total of money owned by wage-earners and people of small means can not be less than \$2,500,000,000. It may not all be in banks or loan associations, but it is at their call.

Now suppose, in compliance with the demand for more money, Congress should provide for the free coinage of silver or issue fiat paper until the amount outstanding should be equal to \$50 per capita, thus depreciating the purchasing power of these savings 20 per cent. or more—what would be the result? Simply this: These wage-earners who have this vast amount of accumulations in savings institutions, loan associations and banks would be as effectually deprived of \$500,000,000 as if

they had been deprived of it by theft or highway robbery. It would not be so evident a robbery, but it would be as actual. Theories are often delusive, but facts are not; and the facts gleaned from experience prove that when a people resort to a money which is not based upon the coin which the commercial world uses, that money will not have the purchasing power of the money of commerce. To-day the United States has that money. Fifteen years ago we did not have it, and our dollar was worth not over 85 cents in the money of the world, and its purchasing power was less by 15 per cent. Wage-earners should be the last to listen to the clamor about cheap money and free silver coinage.

[Manufacturers' Record, Baltimore, Md., January 24, 1891.]

SAVINGS BANKS NEEDED.

Savings banks are institutions in which money can be deposited in small sums and earn an increase. They are not intended for the deposits of investors and capitalists, for they are presumed to be capable of taking care of what they have and of knowing how to employ it to advantage. The savings bank is the custodian of the petty surplus of the poor, the careful savings of self-denial, the spare dollars that would otherwise be spent needlessly, the small legacies belonging to widows and orphans. Their treasury assets represent aggregations of repeated deposits of small sums, few or none of them large enough, singly, to make any showing on the ledger. Some of these banks will open an account for a 1-cent deposit; others have a dime as their least limit; others a dollar, but nearly all refuse to extend accounts beyond \$5,000, and much prefer to keep them below that sum. Nor is it the chief aim of savings banks to make as much money as possible. The policy is first to save money; next to add something to it by accumulations of savings and of earnings.

In the truest and best sense savings banks were intended to be institutions of practical benevolence, and whenever they have been conducted on that idea they have been a blessing to their depositors and to the communities in which they were located. Their mode of operation is simple, easily understood, and safe beyond all possibility of serious losses if the managers are competent and honest. An example will illustrate the system. In 1838 the trustees of a recently chartered savings bank in Connecticut announced that their books would be opened for deposits on a certain day. The first to appear at the time specified was a young mechanic, who deposited \$10 to the credit of his infant daughter. From time to time, when he had a few dollars to spare, he put them to the same account. Other parents did likewise. Needlewomen, servant girls, wage-earners, children who were influenced by their parents to save a part of their pocket money, farmers with a few dollars for which they had no immediate need, became frequent depositors. Whenever these dimes and dollars aggregated enough of a sum for the purpose, it was loaned on first-class security with a large margin for safety. Every 6 months the net profits of these accumulated savings were distributed pro rata among the depositors, and, unless withdrawn, was placed to their credit and became a part of their capital.

As years passed and population increased, depositors were more and more numerous, and now that bank has more than \$7,300,000 to the credit of its 22,579 depositors and a surplus sufficient to make good any possible shrinkage of value in the securities upon which its money is loaned. A remarkable fact in this connection is that fully four of these, more than \$7,000,000 represent the savings of servant girls and other small wage-earners.

These banks have been among the chief factors of New England's prosperity. The enormous sums that have gone into railroad, mining, and manufacturing enterprises in the West could never have been spared from New England but for these banks. Their aggregated millions of dollars have been the solid reserve fund from which capitalists could borrow what they needed upon gilt-edge securities. They have supplied manufacturers and merchants with money when they needed it, at times when banks of discount and exchange could not accommodate them. They have furnished the facilities that enabled tens of thousands of thrifty people to own their homes who would otherwise have been rent-payers all their days.

The deposits in the savings banks of New England, New York, New Jersey, and Pennsylvania during 1890 aggregated the enormous sum of \$1,279,000,000, an increase over 1889 of \$65,000,000. The depositors numbered 3,520,000, a gain of 140,000 for the year. This was equal to a saving of \$4 per capita for the 17,300,000 population of those nine States. Referring to these facts, the Pittsburgh Commercial Gazette says:

"These figures show not only that the working classes have been prosperous, but that they have been thrifty as well. The disposition to save has been growing with the opportunities for saving, and the deposits in the savings banks fall far short of exhibiting the full extent of the accumulations. There are scores of building and loan associations, each with hundreds of stockholders, and the weekly contributions in the form of dues foot up millions annually. The shareholders for the most part have for

their object the procurement of homes, but many seek this form of investment because it brings a higher interest than is paid by the savings banks. The annual savings in the manufacturing States are certainly largely in excess of \$4 per capita in periods of prosperity, and, taking the whole country through, \$250,000,000 would not be an excessive estimate of the annual savings when work is plenty and wages good.

"There are sections of the country in which savings banks are few and far between, and in which the accumulations must necessarily be largely withdrawn from circulation. Money invested in banks does not lie idle, and that which goes into building and loan treasuries is actively employed, but where there are none of these facilities for investment the small hoardings are laid away in a secure corner to meet the purposes for which they are intended."

The South has a few savings banks, and within a few years has organized quite a number of building and loan associations. These latter are useful institutions when confined to home purposes and managed by home people, but when their field of operations is widely extended they are exposed to hazards of various kinds that endanger their safety. Savings banks are very different affairs. They accumulate money that would be stowed away in hiding places until needed. They put it into circulation under safeguards that insure its return to its owners. It is very much within bounds to say that there are now hidden away in the South \$50,000,000 in small sums that would be restored to circulation and usefulness if there were savings banks in all the considerable towns of every State.

[Cottage City (Mass.) Herald, February 5.]

On the continually urged subject of savings banks under the Post-Office Department of the Government, the Postmaster-General, in his annual report, says:

"It is the large mass of wage-earners outside of large cities that clamor for help to keep hard-earned gains. To teach economy and thrift as leading up to better citizenship falls short if there is no adequate provision for the safe-keeping of savings. Such places ought to be within an hour's walk of the home of every workingman. They can not be left to private capitalists to provide, because it would not pay them to deal in small sums or perform the necessary labor. The post-offices and the postmasters are in every respect rightly situated to do this work. It would be a great comfort to the people to have these banks that could not be affected in times of financial panic.

"Of all the great powers of the world, the United States and Germany alone are without postal savings systems. The last report of the British authorities shows that on the average 1 person out of every 8 is a depositor, and while in England and Wales the average balance to each depositor is almost \$70, in Ireland, where the conditions are harder, the average balance to each depositor is close to \$94."

The advantage to the towns and villages of this country, in case of financial panic, can not be estimated, and the thrift and gain from interest to the people will result in an enormous increase in the people's wealth, a great part of which is to-day hidden away in odd places subject to destruction by fire and thieves.

[Manufacturer's Record, Baltimore, February 14, 1891.]

THE SOUTH NEEDS SAVINGS BANKS.

The Manufacturer's Record has persistently sought to impress upon the people of the South the importance of establishing savings banks. No community will develop habits of economy and savings unless encouraged thereto by having a place where every spare dime or dollar can be deposited with absolute safety and with the certainty of drawing a fair rate of interest. With savings banks near at hand every man, woman and child gets into the habit of economizing and putting away a few cents or a few dollars as often as possible in order to prepare for a rainy day. Where savings banks are not convenient there is but little inducement for the people to make the small savings which gradually aggregate, as in New England, into hundreds of millions of dollars. The South is now producing an enormous amount of wealth; its farmers are prosperous; its laboring classes of all kinds are fully employed at good wages, and with a united effort through the organization of savings associations it would now accumulate surplus wealth more rapidly than any country in the world has ever done. The millions of dollars that are now hid away in old stockings would be drawn out and would furnish an enormous amount of fresh capital with which to handle the business of that section. A compilation from the St. Louis Republic shows the condition of the savings banks in thirty States, containing the number of banks, list of States, estimated population January 1, 1890, number of depositors, aggregate amount of deposits September 30, 1889, amount due each depositor, average due each man,

woman and child in the State, and the percentage of depositors to the whole population of each State as follows:

No. of banks	State.	Estimated population, 1890.	No. of depositors.	Total amount of deposits.	Amount due each depositor.	Amount due each person in State.	Per cent. of depositors to population.
55	Maine.....	660,000	124,562	\$40,969,663	\$309	\$63.00	19
69	New Hampshire....	370,000	145,021	57,300,590	395	155.00	40
31	Vermont.....	333,000	61,759	17,801,327	288	54.00	17
176	Massachusetts.....	2,072,000	983,202	315,135,070	320	153.00	47
38	Rhode Island.....	330,009	123,102	57,699,884	469	174.00	37
85	Connecticut.....	750,000	287,776	105,850,078	267	141.00	38
125	New York.....	6,500,000	1,362,352	523,677,515	384	80.00	21
13	Pennsylvania.....	5,061,600	213,133	64,968,633	395	13.00	4
25	New Jersey.....	1,500,000	114,627	20,696,529	268	20.00	7
2	Delaware.....	175,000	15,059	3,405,411	230	20.00	8
1	District of Columbia	219,000	11,059	1,154,079	104	5.00	5
20	Maryland.....	1,122,000	122,887	34,203,241	279	30.00	11
1	West Virginia.....	854,300	1,850	55,123	29	.....	.....
5	North Carolina.....	1,750,000	5,001	223,801	45	.....	.....
9	South Carolina.....	1,350,700	13,550	2,692,264	199	2.00	1
7	Georgia.....	1,752,700	13,474	1,937,097	61	1.10	2
9	Alabama.....	1,500,000	1,765	236,108	134	.....	.....
1	Louisiana.....	1,050,000	2,889	914,555	319	1.00	r.....
1	Texas.....	2,190,000	1,069	294,140	247	.....	.....
8	Tennessee.....	1,800,000	11,734	1,289,527	110	.70	.....
11	Ohio.....	4,000,000	55,109	25,390,712	390	6.35	1½
51	Indiana.....	2,440,000	11,696	2,776,119	237	1.00	.....
12	Illinois.....	3,750,000	29,605	7,620,982	257	2.00	3½
56	Michigan.....	2,250,000	99,245	24,015,207	232	11.00	4
1	Wisconsin.....	2,000,000	519	47,704	92	.....	.....
50	Iowa.....	1,875,000	43,669	13,125,058	309	7.00	.....
6	Minnesota.....	1,500,000	16,767	3,979,436	237	2.65	1
28	California.....	1,500,000	114,034	87,101,912	764	38.00	8
2	Dakota.....	600,000	434	25,927	56	.....	.....
1	Utah Territory.....	230,000	6,056	493,276	82	2.13	.....
849		49,894,300	4,021,523	1,425,230,349	354	29.56	

These figures are worthy of careful study. They show that out of a total population of 2,000,000 in Massachusetts, 983,000 are depositors in savings banks, it being the custom for parents not only to deposit in their own name, but also to make small deposits in the name of every child, so that when their children attain age they may have a start in life. In the savings banks of that State there are \$315,000,000, which is more than three times the national banking capital of the whole South, even including Maryland. These \$315,000,000 play a greater part in furnishing the capital with which to conduct the business operations of that State than all the national banks in Massachusetts. Even Rhode Island, with 330,000 population, has \$57,699,000 in its savings banks. Excluding Maryland, the whole South has less than \$10,000,000 in its savings banks.

The leaders in Southern development should consider these facts and endeavor to begin the great work of developing savings banks. There is scarcely a town in the South where a well-managed savings institution could not be made profitable and at the same time prove of much value to the business interests of the place, and encourage in the town, as well as in the surrounding country, habits of thrift and economy. The South will never attain the financial strength which it should have until it learns to concentrate and aggregate its money by means of well-managed savings banks.

[Lafayette (Ind.) Courier, February 21.]

Experience with building and loan associations have demonstrated the fact beyond all question of doubt that they are of inestimable value to the wage-workers of the country and to all others who are ambitious to economize and to provide something for the proverbial rainy day. Well-conducted savings banks are also a boon to those who desire to make small weekly or monthly deposits, but unfortunately there have been so many failures among this class of institutions that their natural patrons have become wary of them—in fact, almost resentful. It should not be understood, however, that these allusions have any bearing upon the Lafayette Savings Bank, whose reputation is beyond criticism. But taking the statistics of the country at large, it will be found that there has been an appalling number of failures of savings banks during the past year, and the tendency has been to create distrust among a class of people who are prone to look upon capitalists as their natural enemies.

The proposition to establish a postal-saving system has been long discussed, but it has never before had the earnest consideration that it is now receiving, and there is a hopeful prospect that the theory will become a substantial reality. By the system,

every post-office in the country can be made a safe depository and with the assurance of absolute security. No matter how little confidence the people may have in private institutions, they have firm faith in the integrity of the Government, and will not hesitate nor be afraid to deposit their earnings with the designated and bonded agents of the United States. The system can be established with but comparatively little expense and without increasing the machinery of the Post-Office Department to any appreciable extent. The mechanic or day laborer who would have a feeling of timidity about entering a big banking house to deposit a small share of his earnings, would gladly avail himself of an opportunity to make the deposit with the local postmaster, for the reason that he feels that he has as much right to be there as any other man, for the post-office is a part of the Governmental structure he helps support, and he reckons justly that he is entitled to share in its benefits.

The advantages of the system are manifest and manifold. The first and most important consideration is that the depositor has absolute assurance that there will be no failures, no suspensions, no defalcations that will not be made good by the Government. It will also serve to cultivate a disposition in the direction of economy among a class of people who are most in need of the inculcation of a spirit of that kind, and there is no doubt but that a brief experiment will show most gratifying results. The benefits to be derived from small savings have been demonstrated in the marvelous results achieved by the building and loan associations, and the proposed scheme for a postal-saving system is another long step in the direction of increasing the general comfort and prosperity of the working classes who earn their bread by the sweat of the brow.

[Philadelphia Bulletin.]

Mr. Wanamaker is still a firm believer in postal savings banks, and will advocate them in his forthcoming report. It seems, however, that he would use them as an adjunct to and not a rival of the savings banks of the cities, and would, therefore, establish them principally at county post-offices where there are no other depositories of small sums. No doubt they would be highly useful there.

[Camden (N. J.) Post.]

Postmaster-General Wanamaker shows by his annual report of this year that his earnest desire for the establishment of postal savings banks is in no degree abated. In fact the head of the Postal Department is an enthusiast on this point.

Whenever postal savings banks have been introduced they have produced most excellent effect. They have been the means of inducing thousands of persons in the humbler ranks of life to save their earnings. So long as there was no opportunity to put their moderate savings where they would be safe and at the same time earn something in the way of interest, they were squandered as rapidly as they were received. But no sooner were these postal banks established than thousands hurried to them with their small sums, ranging from a few cents to sums of \$5 or more. They have also shown that once this habit of savings has been introduced it grows rapidly. There has been a large, steady increase throughout Great Britain ever since the experiment was introduced. The sums at present in these depositories amounts to many millions of dollars, and it is safe to say that but for this opportunity offered to these people the greater part of this money would have been spent in ways that would have done more harm than good.

[New York Herald.]

Representative Lodge, of Massachusetts, has introduced into the House at Washington a bill for the establishment of postal savings banks.

Such institutions have long been in existence in England, and have there proved highly successful. They have been found to be a great convenience to the masses, and have afforded a sense of security that encourages thrift and promotes industry. There is absolute confidence in the Government, so that when the poor depositor intrusts a dollar to the safekeeping of the Government, he has no shadow of fear that he will not get his dollar back, with interest, whenever he wants it. Moreover, money put in one post-office can be drawn out at any other. For example, if a man has deposited at London he can draw at Liverpool.

But in Boston a voice has already been raised, and in other great municipal centers it will doubtless be raised, against the proposition to introduce the system into this country. The objection is urged that postal savings banks are neither necessary nor desirable. Ample facilities, it is contended, are afforded by existing savings banks which are as secure as human ingenuity and legislation can make them. Their organization and management, investment of deposits, payment of interest, etc., are governed by the most stringent laws. The whole business is subject to a governmental control and supervision so strict that absolute safety is secured. With such a system in successful operation it is claimed that there is no need of postal savings banks, and, moreover, that the establishment of the latter would be absolutely detrimental, because their effect would be to withdraw from the local community the surplus deposits now invested there and transfer them to Washington.

There is force in these views, but it is limited to large cities and towns like those of New England, New York, Pennsylvania and some other States where savings banks are sufficiently numerous for the wants of the people and surrounded with such safeguards as guarantee security. But there are other quarters of the country, notably in the far West and certain parts of the South— and for that matter even rural districts of the North and East—where the objections to postal savings banks do not hold, but where, on the contrary, there are cogent reasons in their favor. Wherever ordinary savings banks are not found or wherever they are not absolutely secure, there a postal savings bank must meet a popular want and serve a useful purpose. There it will afford conveniences and facilities which the people now lack and beget a popular confidence that does not now exist.

We see no reason why these advantages may not be secured without incurring any of the disadvantages urged against the reform. This can easily be done by establishing postal savings banks in those places where they will be a benefit to the people and not establishing them where they are not needed or desired. Indeed, this is practicable under Mr. Lodge's bill, as we understand it, for it empowers the Postmaster-General to designate the offices which shall serve as savings banks. If this power is wisely used the new system can be made a public boon.

UNFAVORABLE.

[Philadelphia Herald, November 25.]

It is said that Postmaster-General Wanamaker will devote considerable space in his forthcoming report to the subject of postal savings banks. It will urge the adoption of such depositories on various grounds, but more particularly because their establishment would promote habits of saving. This is a matter of conjecture, which Mr. Wanamaker permits himself to indulge without reason.

Postal savings banks are objectionable because they bring the Government into competition with individual enterprise on unequal terms. It would be a wise rule to restrain the Government from such competition in all cases. Where individual enterprise fails to meet the public demand for commerce or convenience the Government may properly step in to serve the people. But on no other condition is it permissible.

The tendency is to govern too much. That is the evil effect of Mr. Wanamaker and his party. He and it think that the people are in need of some sort of guardianship to regulate their lives and their habits. The laws to restrain evil passions and bad tendencies are all right because they are necessary for the protection of the public against the excesses of individuals. But there is just as much need for restraints upon power in its tendency to usurp the functions and absorb the rights of individuals.

This country has no need for postal savings banks. The party in power might be benefited by them, because they would multiply places for party heelers and dependants. But there is no necessity for them from a business standpoint. We have substantial and well-regulated savings banks to accommodate the public, and the trenching on that legitimate business by the Government would be an evil of incalculable magnitude.

[Omaha Herald, November 26.]

Postmaster-General Wanamaker believes that the reason there is a scarcity of money in circulation is due to the fact that millions of dollars are secreted under carpets and in stockings. He is laboring under a serious misapprehension, which is likely to encourage burglars and thugs. It can safely be stated that there is not a man in Omaha who has his carpets padded with \$1,000 bank notes, and not a woman who carries \$1,000,000 around in the manner that Mr. Wanamaker suspects.

[Boston Globe, November 26.]

Postmaster-General Wanamaker is trying to interest his party in postal savings banks. It would be more to the purpose if the party would stop the McKinley nonsense and give the people a chance to save something. It is easy enough for anybody to find a savings bank; the trouble is to find the savings to put in it.

[San Francisco Bulletin, November 29.]

The establishment of postal savings banks is recommended in States having no laws regulating savings banks, and in others upon application of a considerable number of residents of any one locality; the savings received within a State to be deposited with the national banks in that State on application, in such amount and at such interest as the Secretary of the Treasury may prescribe; such deposits to be declared preferred claims. It is very likely that this proposition will arouse opposition and require amendment. Certainly all other depositors in a national bank would object to letting postal savings banks have the first claim on their deposits in case of a failure. Nor does the plan provide the best security for depositors in the postal banks. National banks do not usually let in their depositors for large losses in case of failure,

owing perhaps to Government supervision, but the liability to loss is always present, and a postal savings system should, as far as possible, guaranty against it. If the rule observed in case of Government moneys loaned to national banks, that they be secured by a deposit of bonds in the Treasury, should be made in the case of deposits by postal banks there could be no valid objection from any quarter. Less than that would hardly be satisfactory.

[Philadelphia Record, November 30.]

As for the postal savings bank system, which Mr. Wanamaker again recommends, there is no doubt that it has had some success in European countries which suffer from chronic deficits, and in which banks are held in more or less distrust. But this Government could not pay enough interest to attract depositors without needlessly taking the money out of the Treasury, nor without injuriously competing with the banks. At the same time, it is very questionable whether the national banks would be willing to pay interest on the Government deposits of postal savings while holding large amounts of Treasury money without interest. As a rule, the people of this country are shrewd enough to know where and how to deposit their money, without the kindly aid of a grandfatherly Government.

[Louisville Courier Journal, December 1.]

Furthermore, following the traditional policy of the Republican party, he recommends that the Government shall exercise paternal care over the earnings of the poor and establish for the people a postal savings bank.

The value of savings banks the people themselves are beginning to recognize, and when they have anything to put in them it is quite certain they will be established. Perhaps, if the Government would reduce its expenses and reduce taxation, the farmers and laboring men throughout the West and South might be able to accumulate something and in time establish savings banks of their own. These institutions should be local in character and control. To gather the money of the people and then loan it to the national banks, as Mr. Wanamaker proposes, is unwise. There is no call for this kind of interference by the Government, as the people are perfectly able to take care of these matters themselves.

[New York Sun, December 2.]

Mr. John Wanamaker, Postmaster-General of the United States, in his annual report makes the following recommendation in respect to postal savings banks:

"I recommend that the Post-Office Department be authorized to establish postal savings banks, under regulations formulated by the Postmaster-General. That the said banks be located as follows: (1) In States having no laws regulating savings banks; (2) in any other States, upon petition of a considerable number of residents of any one locality; and (3) not more numerous than one post-office for every 10 miles of area; that the interest to be paid depositors shall be fixed by the Secretary of the Treasury at the beginning of each year, and be one-half of 1 per cent. less than the average rate paid to depositors by private bankers; that all postal savings received within a State shall be placed on deposit with the national banks of that State, on application, in such amounts and at such interest as the Secretary of the Treasury shall prescribe; and that all such deposits be declared by special enactment preferred claims against the banks holding them."

This is a very pretty scheme, but will the Postmaster-General be kind enough to point out any provision in the Constitution which permits his Department or any other department of the Federal Government to go into the savings bank business?

Furthermore, can not the people of this country take care of their money without the assistance of the Government? We rather think they can.

The Post-Office Department does not do the work already committed to its charge with such conspicuous success as to convince the people that it ought to be intrusted with a banking business in addition. In this very report of Mr. Wanamaker's he denounces the New York post-office building as totally inadequate to the requirements of the postal service, and says that better quarters are needed; yet it is only a few years ago that this building was put up by a Republican administration at immense expense, and now it is condemned by a Republican Postmaster-General.

We are against any extension of Federal power. To turn every post-office in the land into a savings bank would only tend to strengthen the authority of the Federal officeholders throughout the country. The scheme is of doubtful constitutionality, to say the least, and should be opposed by every Democrat.

[Minneapolis Journal, December 4.]

Postmaster-General Wanamaker's postal-savings-bank scheme does not find very great favor. The public is rather indifferent to it. The fact is, the savings-bank system as operated throughout the country is perfectly satisfactory. There is provision in it for the most minute savings deposits. The Government can't conduct the business better than private concerns can. It is very seldom that a savings bank fails

irremediably. Under our State laws they are perfectly safe. The Government has enough to do anyway, without running a savings bank.

[Gordonsville (Va.) Gazette, December 5.]

Postmaster-General Wanamaker recommends the establishment of postal-savings banks all over this broad land. This is another scheme for increasing the Federal power and patronage, and is, we believe, wholly unconstitutional. The people of this country should be able to take care of their own money without interference from the Government. If the Harrison and McKinley crowd should hold the Government for many years, there would be comparatively few persons left in the country with a spare dollar to put in a postal or any other savings bank. If Mr. Wanamaker will drop his wildcat schemes for Government savings banks, parcels post, and telegraph, and will give the public a good mail service, the people will ask nothing more of him.

[Milwaukee News, December 6.]

Postal-savings banks are the hobby of Postmaster-General Wanamaker just now, and he is trying to get his party to indorse the scheme. It would be more to a purpose if the party would stop the high-tariff nonsense and give the people a chance to save something. It is easy enough for anybody to find a savings bank; the trouble is to find the savings to put in it.

[New York Witness, December 10.]

Mr. Wanamaker's proposal to open postal-savings banks wherever called for and to deposit the money lodged in them in the banks of the several States in which the money is received, does not commend itself to our judgment. While the Federal Government was in need of money the Witness again and again urged the opening of post-office savings banks as a means of supplying the Government with funds at a low rate, and at the same time, of offering the people an opportunity for laying by their savings without any risk of loss. But now that the Government has more money than it needs and has no prospect of again requiring to borrow money, except it be on account of very imprudent legislation, we can not see that it would be justified in receiving money on deposit simply to lend it out again. The Government has no more right to go into the banking business than it has to go into the business of raising wheat for market, or of manufacturing shoes.

[Lancaster (Va.) Examiner, December 11.]

Postal-savings banks would probably be a good thing, but there is no great outcry for them at present. When postal-savings banks were established in England, there were in the whole kingdom but twenty savings banks which were open every day; a want remained to be filled. The circumstances are different here.

[Philadelphia Herald, December 12.]

The postal-savings-bank job still stalks forth. In the Senate yesterday it was brought forward and the Post-Office Committee was directed to inquire into the advisability of establishing the scheme. Of course the committee will decide in favor of the banks. The members will no doubt see ample opportunities for them to make profit out of it.

In an interview in Chicago yesterday Mr. Chauncey M. Depew said he didn't believe much in paternal government. That is an additional proof that Mr. Depew has a large and level head. It was by intelligent personal effort that he became the rich and useful man he is. Naturally, therefore, he believes in the Democratic idea of individual effort. "That government is best which governs least."

But the promoters of the postal-savings bank scheme are of a different mind. They believe that the people need to be secured by Government. They imagine that the establishment of postal savings banks will compel people to put their earnings on deposit. It's a silly notion which comes from crazy brains, and the sooner it is abandoned the better.

[San Antonio (Tex.) Express, December 13.]

In the Senate of the United States Mr. Mitchell has introduced a postal-savings bank bill. The scheme is not indorsable, and it will not work. Deposits of money by the people to the credit of the Government have been tried before. It was not the intention of the framers of the Constitution to make the Government rich at the expense of the people. Savings banks inaugurated by private capital have been of great benefit. But a Government savings bank is another matter.

[Omaha Herald, December 28.]

The Postmaster-General is very urgent indeed for the establishment of a postal savings bank, more particularly in places away from centers of population, where people do not enjoy the facilities extended to those who dwell in large cities.

Ill-natured persons might say that the inhabitants of remote rural districts are not so well posted in the world's wicked ways as those who have the opportunity of perusing the daily papers, but this additional argument is unnecessary for the purposes of this article.

Postal savings banks would undoubtedly prove of great benefit to the people of this country, particularly to those whose means are limited, but who still desire to economize their savings.

But the question arises and presses itself into prominence, whether this is the propitious day and hour for the establishment of these beneficent institutions, which can only be based upon perfect confidence in the unimpeachable integrity of those who are intrusted with their management. And the very ignorance of the common people of the many excellent qualities of Mr. Wanamaker might lead them into error likely to be productive of very serious results—in fact, sufficient to cause the failure of the entire scheme.

[Galveston News, January 18.]

Mr. Wanamaker's postal-savings bank scheme has received the approval of some Democratic papers. On the face of it it seems to be a good thing, that will give security to the poor from bank failures, promote thrift, and cost only a moderate amount for expenses. Let all the advantages be granted, and it still remains to be inquired whether the scheme might not wisely be rejected as part of a system which, among other things, will render the Democratic party obsolete and the system of individual enterprise ultimately impossible. Can it be believed that anyone would be found to advocate paternal measures if these were never demonstrably beneficial either in promoting security or in saving expense? There are many things, perhaps, which the Government can do, if the people so will, in a manner to conserve wealth, increase confidence, and serve the majority of the people, at only the moral cost of striking down some private business and strengthening and widening the trust of the people in the communal powers of Government in industrial matters. But this qualification should be intelligently understood. It bears within itself the main question of the future. It will be hopeless for any party to combat paternalism by combating only its abuses, but claiming its benefits and promoting its introduction wherever it suits themselves.

The hundreds of thousands of people who have read popular works favoring communism know that in conducting the mercantile business of the country so as to avoid the waste in competitive storekeeping and selling goods a prospect has been indicated of a saving far beyond the economy proposed in savings banks; and who shall say that the communistic system, as a whole, depends for trial upon anything else than the acceptance of the principle? It would render savings banks unnecessary if carried out in the fullness of the plan of its latest prominent apostle, Mr. Bellamy. Who will deny that if the Government is to do a banking business for the people because it can displace private banks, the same logic will justify it in doing a mining and manufacturing business, in which it can save the people indefinitely more than through any savings-bank venture? Formerly that sort of experiment was considered as a separate thing. Now the claims of communism come nearer, as a whole, and must be so considered, or else certain parties and classes will find their mistake to be that they have not reckoned with the increase of logical thought in the people. It can not be accepted as a conclusive argument for any plan that it saves some immediate trouble or cost. The more important bearing may be how it turns people into the communistic channel.

[New York Sun, February 7, 1891.]

Mr. Evans, of Tennessee, has introduced into the House of Representatives a bill to establish postal savings banks and encourage small savings. Bills differing more or less from Mr. Evans's in details, but of the same general tenor, have been introduced into previous Congresses. The postal savings bank has become, in fact, a sort of hobby with the benevolent persons who believe in a paternal and do-all Government; and in the South, where savings banks are less common than in the North, the idea has found a certain support among people who are not ordinarily inclined to favor any extension of the power of the Federal Government. The postal savings bank does well enough for England, but that is no reason why it should be introduced into the United States. It is no business of the Government to set up the Post-Office Department as a receiver and guarantor of the savings of citizens, or to impose upon the Secretary of the Treasury and the Postmaster-General, as Mr. Evans's bill provides, the duty of loaning postal savings funds to banks and of issuing interest-bearing certificates of deposit. The business of the Post-Office Department is to carry the mails. The business of the Government is to mind its own business. The citizens of the United States ought to have sense enough to take care of themselves.

IN THE SENATE OF THE UNITED STATES.

MARCH 3, 1891.—Submitted and ordered to be printed.

Mr. CALL submitted the following

RESOLUTION:

Resolved, That the President of the United States be, and he is requested to have an investigation made in the case of Graham, an American citizen, who is stated in the newspapers to be confined in prison in Mexico under circumstances of extreme cruelty under a conviction of murder, of which it is alleged he is innocent, and that he will cause such measures to be taken as may be proper under the circumstances for his release.

DYING IN A MEXICAN PRISON—A YOUNG AMERICAN UNJUSTLY CONFINED ON A CHARGE OF MURDER.

CHICAGO, February 28.

M. C. Bernard, a mining engineer, who has just returned from Mexico, says that a young American named Graham is in prison at Guanajuato under a sentence of 20 years on an unjust conviction of murder. Graham was attacked on the streets of Lagas by a Mexican and a German, who were drunk, and he shot the German in self-defense. Bernard says he was an eyewitness of the affair, and testified as to the facts on the trial, but 10 Mexicans, who did not see the fight, testified that Graham started it.

Bernard adds: "Graham might just as well have been sentenced to death, for he will never live 3 years in prison at Guanajuato. The penitentiary is the filthiest institution in the Republic. There are 500 persons in a place that was made to accommodate 300. The victims die every week, sometimes two or three in that time. Suicides, I have heard, are of frequent occurrence. The cells are alive with vermin, and filth abounds everywhere. Men, women, and children are piled into the same place, and every one becomes covered with vermin soon after being put there. The diet consists the year round of corn and pepper, with a little grease.

IN THE STATE OF THE UNITED STATES

A HISTORY OF THE UNITED STATES

THE HISTORY OF THE UNITED STATES

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The history of the United States is a story of a people who have grown from a small colony of settlers to a great nation. It is a story of the struggles and triumphs of a people who have built a nation of freedom and justice. The story begins with the first settlers who came to the shores of North America in search of a new life. They found a land of vast resources and a people who were different from them. They fought for their survival and for their freedom. They built a nation that was based on the principles of liberty and justice for all. The story continues through the years of struggle and triumph, from the American Revolution to the present day. It is a story of a people who have never given up on their dream of a better life for all.

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IN THE SENATE OF THE UNITED STATES.

MARCH 3, 1891.—Presented, referred to the Committee on Territories, and ordered to be printed.

Mr. SQUIRE presented the following

MEMORIAL OF THE CHAMBER OF COMMERCE OF THE CITY OF SEATTLE, STATE OF WASHINGTON, PRAYING FOR THE ESTABLISHMENT OF A TERRITORIAL FORM OF GOVERNMENT OVER THE TERRITORY OF ALASKA.

To the Senate and House of Representatives of the United States of America in Congress assembled :

The Chamber of Commerce of the city of Seattle, State of Washington, at a meeting held on the 3d day of November, 1890, passed the following resolutions :

Whereas the progress of the Territory of Alaska, since the passage of the act to create and organize a civil government in that Territory, approved the 17th day of May, 1884, and known as the organic act of that Territory, has been so great that it has simply served to exemplify the utter inadequacy of said act for the purposes for which it was passed, and the imperative necessity for some immediate action on the part of the Government of the United States to protect and develop her resources, and to organize a better government for the protection and welfare of its citizens :

Resolved, That its system of judiciary is so restricted and limited that the administration of justice not infrequently fails, and offenders against the laws remain unpunished and commercial contracts unenforced.

Resolved, That it is often a puzzle to ascertain which of the laws of Oregon are made applicable to the affairs in Alaska by the terms of said act.

Resolved, That its greatest necessity is a liberal system of land laws, which if enacted would rapidly increase her commercial and agricultural wealth.

Resolved, That its merchants and its farmers would feel a better security for their investments and their enterprises when they can become the owners of the land upon which their improvements and their toil have been expended.

Resolved, That a system of civil government in which the people themselves would be able to govern, protect, and administer their local affairs is an absolute necessity.

Resolved, That said Territory has paid a revenue into the Treasury of the United States from one industry alone which now amounts to almost the entire sum which was paid to Russia for the purchase of

said Territory, and that a small part of this sum would establish and maintain a civil government in that Territory which would guarantee the development, maintenance, and protection of its commercial, agricultural, and mineral wealth, its fisheries and other industries, and render the country more habitable.

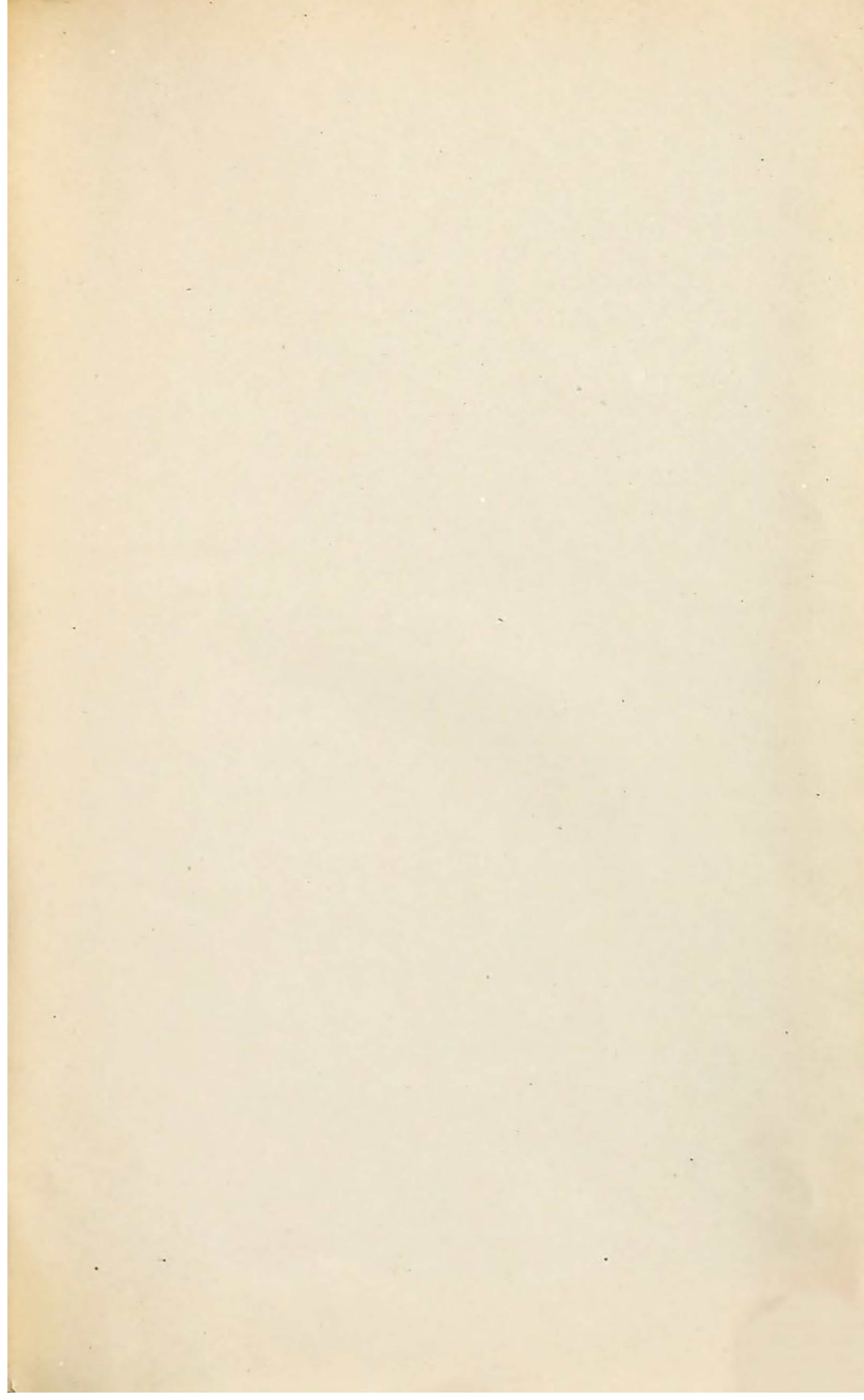
Resolved, That the commerce of the city of Seattle with said Territory is already of that magnitude that it demands a more liberal policy on the part of the Government of the United States for its protection and advancement.

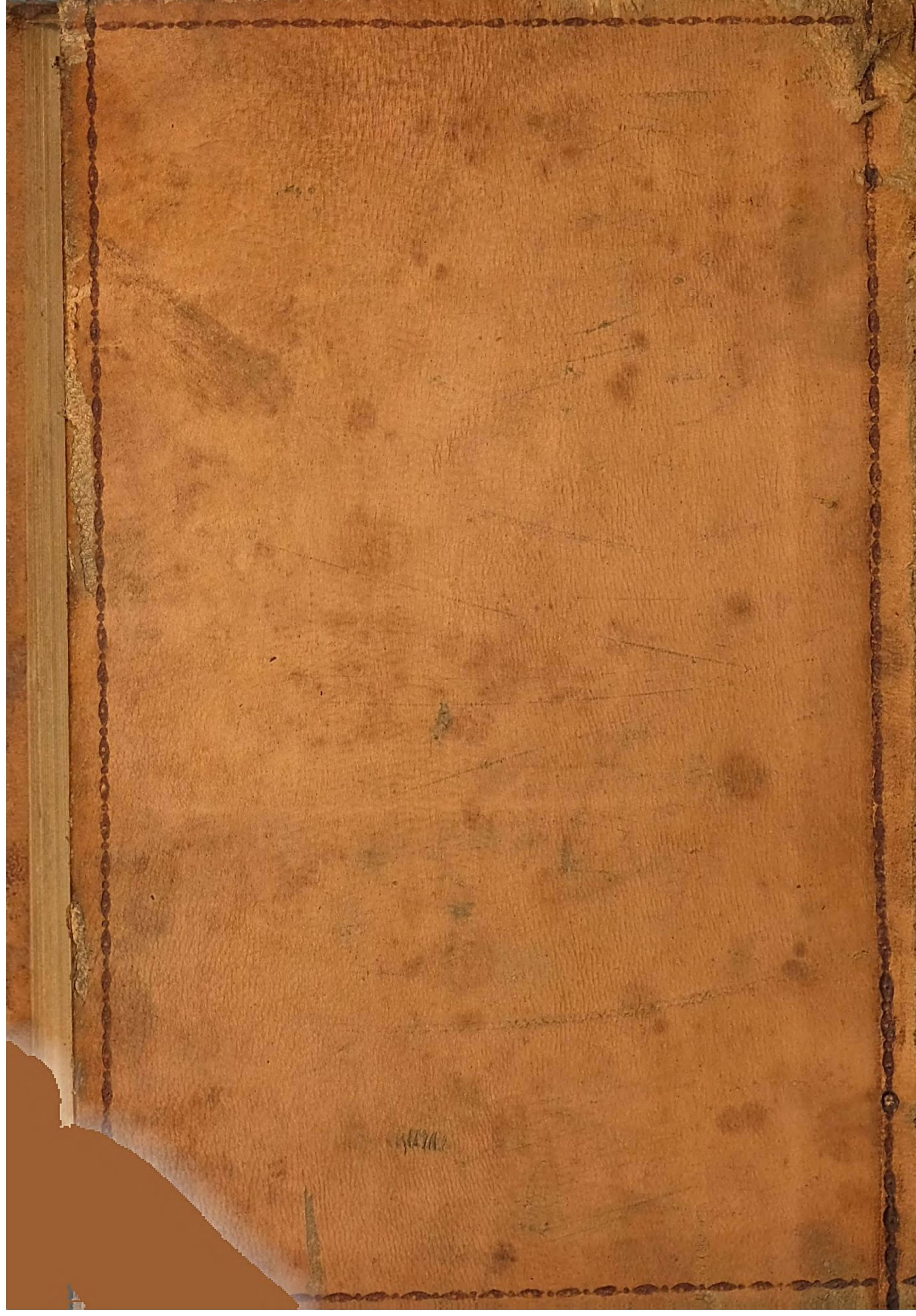
JOHN LEARY,
President.

Attest:

J. W. DODGE,
Secretary.

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Senate documents

Bd.: [418.] 1890/91, Vol. 3 = Congress 51, Sess. 2

Washington, DC 1891

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